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Published April, 2025

By

West African Union University Institute Press,
Cotonou, Republic of Benin.
+22964115701 & 2348037750746
waujournal@gmail.com

ISSN: 2814 0516

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Submission of Articles Guidelines

- Papers should not be more than 18 pages and should be accompanied with an abstract of not more than 250 words.
- The following referencing styles are allowed-APA, MLA and Chicago.
- Articles should be typed in Times New Romans, font size 12 and 1.5 line spacing.

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Évaluation de la fonction sociale et de l'intérêt de l'hyménoplastie chez les jeunes filles à travers Foulard et Hymens de Mona Eltahawy

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Résumé

Les chercheurs ont abordé les œuvres d'Eltahawy sous des perspectives des droits humains, la critique des régimes politiques et les mouvements féministes dans le monde arabe mais, l'angle de l'hyménoplastie en tant que mécanisme de contrôle social et son impact sur la vie des jeunes filles a reçu moins d'attention académique. L'étude se propose donc de combler cette lacune en examinant la fonction sociale et l'intérêt de l'hyménoplastie chez les jeunes filles dans le contexte des sociétés contemporaines à travers son livre Foulard et Hymens. L'objectif de cette communication est de comprendre comment l'hyménoplastie est perçue et pratiquée parmi les jeunes filles et d'évaluer son rôle en tant que mécanisme de contrôle social et de maintien des normes patriarcales. Le cadre théorique s'appuie sur la sociocritique ou la sociologie critique, en particulier les travaux sur le corps féminin comme lieu de contrôle et de résistance. Les résultats montrent que l'hyménoplastie est souvent perçue comme une solution pour préserver l'honneur familial dans des sociétés où la virginité avant le mariage est fortement valorisée. L'analyse révèle qu'Eltahawy lutte à protéger les jeunes filles, renforce les structures patriarcales qui les oppriment. L'analyse révèle également une résistance croissante parmi les jeunes femmes qui contestent ces normes et cherchent à revendiquer leur autonomie corporelle. La conclusion de cette recherche appelle à une action sociale et politique pour protéger les droits des femmes et promouvoir l'égalité des genres.

Keywords: Hyménoplastie, Jeunes filles, Fonction sociale, Foulard et Hymens, Révolution sexuelle, Droits des femmes

1. Introduction

La littérature africaine, à travers ses différentes époques et traditions, a toujours été le reflet des réalités sociales, politiques et culturelles du continent. Elle s'est d'abord transmise oralement avant de s'inscrire dans des formes écrites à l'époque coloniale et postcoloniale. Mongo Beti (1956) souligne que

« la littérature africaine est un acte de contestation contre les injustices sociales et politiques héritées du colonialisme ». De son côté, Ferdinand Oyono, à travers *Une vie de boy* (1956), met en lumière les contradictions et les humiliations subies par les Africains sous la domination coloniale, illustrant ainsi les tensions entre oppression et quête de dignité. Ces auteurs, à l'instar de Sembène Ousmane (*Les*

Bouts de bois de Dieu, 1960), ont ancré leurs récits dans une critique des structures de pouvoir et des normes qui façonnent les sociétés africaines, ouvrant ainsi la voie aux débats contemporains sur l'identité, le féminisme et les rapports de domination. Elikwu (2024) affirmed this when she highlights thus:

Contemporary African literature continues to examine the themes of hymenoplasty and the obsession with virginity, albeit through varying approaches and perspectives. Similar to how 19th-century novels such as *Tess of the d'Urbervilles* (1891) by Thomas Hardy and *Anna Karenina* (1877) by Leo Tolstoy examined the consequences of sexual exploitation and societal expectations on women, modern literary works critically engage with the pressures imposed on female sexuality and bodily autonomy.

Les auteurs postcoloniaux ont continué cette réflexion en abordant des questions telles que l'identité, la négritude, le féminisme et la condition de la femme. Mariama Bâ, dans *Une si longue lettre* (1979), met en avant la lutte des femmes contre les traditions oppressives. Plus récemment, Chimamanda Ngozi Adichie (*We Should All Be Feminists*, 2014) et Mona Eltahawy (*Foulard et Hymens*, 2015) ont centré leurs discours sur l'émancipation féminine et la critique du patriarcat dans les sociétés africaines et arabes. Dans cette continuité, la question du contrôle du corps féminin, notamment à travers des pratiques comme l'hyménoplastie est un sujet encore peu exploré dans la critique littéraire africaine et arabe. Il est donc essentiel de l'aborder sous un angle sociocritique pour mieux comprendre ses implications sociales et politiques.

L'hyménoplastie, définie comme une intervention chirurgicale visant à reconstruire l'hymen, est une pratique qui prend racine dans des conceptions socioculturelles, ancrées autour de la virginité féminine. L'hyménoplastie est pratiquée dans plusieurs pays, notamment en Afrique du Nord, au Moyen-Orient et en Asie du

Sud, où la pression sociale sur la virginité féminine est particulièrement forte. Dans ces sociétés, la sexualité féminine est souvent contrôlée à travers des normes strictes, et la perte de virginité hors mariage est considérée comme une disgrâce pouvant entraîner des conséquences dramatiques, allant du rejet familial aux violences dites d'honneur (Abu-Lughod, 1998). Ce phénomène est le reflet d'un patriarcat où le corps féminin est perçu comme un territoire à surveiller et à réguler. Comme l'affirme Fatima Mernissi (2001), « dans les sociétés traditionnelles, l'honneur d'une famille repose sur le corps de la femme, ce qui impose une discipline stricte sur sa sexualité ». Dans de nombreuses sociétés, en particulier dans le monde arabe et certaines communautés africaines, la virginité d'une femme avant le mariage est perçu comme un symbole d'honneur et de pureté.

Mona Eltahawy est une figure incontournable du féminisme arabe et africain. À travers ses œuvres, elle remet en question les fondements du patriarcat et incite les femmes à briser le silence. Son impact dépasse les frontières du monde arabe pour toucher les sociétés africaines où les mêmes problématiques de misogynie, de répression sexuelle et de contrôle du corps féminin persistent. Son appel à une révolte féministe radicale a inspiré une nouvelle vague de militantes qui refusent de se conformer aux normes oppressives et qui exigent un changement structurel profond. Ainsi, elle s'impose comme une voix essentielle dans la lutte pour l'émancipation des femmes en Afrique

Dans *Foulard et Hymens*, Mona Eltahawy dénonce cette obsession pour la pureté féminine et met en lumière les contradictions d'un système qui exige des femmes qu'elles soient vierges avant le mariage tout en leur refusant toute éducation sexuelle. Cette étude vise ainsi à analyser comment l'hyménoplastie s'inscrit dans ce contexte de domination et à traiter les formes de résistance émergentes chez les jeunes filles face à cette pratique. Le livre abordé pour l'étude propose une critique radicale des normes patriarcales qui enferment les femmes dans des carcans sociaux oppressifs. Cette étude se vise donc à examiner la fonction sociale et l'intérêt de ce phénomène

à travers cette œuvre. Le but est de comprendre son rôle dans le contrôle du corps féminin. Il s'agit aussi d'évaluer dans quelle mesure cette pratique perpétue ou renforce les structures patriarcales dans les sociétés contemporaines.

L'hyménoplastie, en tant que pratique chirurgicale visant à reconstruire l'hymen, soulève des questions complexes liées aux normes patriarcales, au contrôle du corps féminin et aux dynamiques socioculturelles qui l'entourent. Dans de nombreuses sociétés, la virginité avant le mariage est perçue comme un gage d'honneur familial, ce qui pousse certaines jeunes filles à recourir à cette intervention afin d'éviter l'exclusion sociale ou les violences associées à la transgression de cette norme. Cependant, cette pratique demeure controversée. D'un côté, elle est présentée comme une solution individuelle permettant aux jeunes filles de se conformer aux attentes sociales et familiales ; de l'autre, elle est dénoncée comme un instrument de reproduction des structures patriarcales qui perpétuent l'oppression des femmes. Mona Eltahawy, dans son œuvre, critique fermement cette obsession de la virginité et met en lumière les contradictions d'une société qui impose des normes rigides aux femmes tout en leur refusant l'autonomie sur leur propre corps. Ainsi, la problématique centrale de cette étude reste de savoir dans quelle mesure l'hyménoplastie constitue-t-elle un mécanisme de contrôle social et de maintien des normes patriarcales, et comment les jeunes filles perçoivent-elles et réagissent-elles face à cette pratique ?

1.1. Objectifs de l'étude

Cette recherche est racinée sur les objectifs suivants :

1. Analyser la fonction sociale de l'hyménoplastie en tant que pratique visant à préserver des valeurs traditionnelles liées à la virginité féminine.
2. Évaluer l'impact de cette pratique sur la vie des jeunes filles, notamment en termes de pression sociale, de

stigmatisation et de conséquences psychologiques.

3. Étudier le rôle de l'hyménoplastie dans la reproduction des normes patriarcales, en s'appuyant sur une approche sociocritique du texte *Foulard et Hymens* de Mona Eltahawy.
4. Identifier les formes de résistance et d'émancipation des jeunes filles face à cette pratique, notamment à travers les discours féministes et les revendications pour l'autonomie corporelle.

Cette recherche est pertinente dans la mesure où elle contribue à combler un vide académique sur la question de l'hyménoplastie comme mécanisme de contrôle social, un angle peu abordé dans les études féministes et littéraires africaines et arabes.

1.2. Revue systématique sur l'hyménoplastie : perspectives médicales, sociales et féministes

L'hyménoplastie, intervention chirurgicale visant à restaurer l'hymen, est au cœur de débats complexes mêlant considérations médicales, sociales et féministes. Cette revue analyse cinq études récentes qui abordent cette pratique sous différents angles, en mettant en lumière les idées centrales de chacune.

(Abdelouahed 2019) examine les motivations psychologiques des femmes recourant à l'hyménoplastie. Elle interroge le désir de « restaurer » l'hymen perdu, le liant à des enjeux profonds de détresse, de subjectivité et de deuil. À travers le cas clinique de « Samira », l'auteure illustre comment cette intervention peut être associée à un fantasme de rester vierge pour le père, révélant des dynamiques psychiques complexes. (Mimeault 2021) plaide pour une approche médicale féministe et inclusive qui tient en compte des déterminants sociaux comme le genre, la classe sociale et le racisme. Elle critique le paradigme médical dominant qui néglige souvent l'écoute des patientes et propose une relation thérapeutique centrée sur leurs besoins, valorisant l'écoute de leur histoire et une compréhension intersectionnelle des problèmes de santé. Bien qu'Abdelouahed analyse l'hyménoplastie sous l'angle psychanalytique,

en insistant sur les motivations psychologiques des jeunes filles qui y ont recours. Toutefois, elle n'examine pas en profondeur l'influence des facteurs intersectionnels tels que la classe sociale, l'éducation et la culture religieuse, qui façonnent également cette pratique. Mimeault adopte une perspective féministe et inclusive sur la médecine, mais ne traite pas spécifiquement de la manière dont les jeunes filles perçoivent l'hyménoplastie dans différentes communautés culturelles.

Nadia (2004) examine l'hyménoplastie comme une stratégie adoptée par de jeunes femmes pour se conformer aux normes sociales valorisant la virginité avant le mariage. Elle analyse comment cette pratique permet aux femmes de réintégrer la norme sociale du mariage en réhabilitant leur statut de « jeune fille », tout en soulignant les pressions socioculturelles qui les y contraignent. Muriel (2017) propose une analyse historique des discours médicaux sur le corps des femmes, en adoptant une perspective féministe. Elle analyse la façon dont ces discours ont évolué du XIX^e au XXI^e siècle et la manière dont ils ont influencé la perception et le traitement médical des femmes, en soulignant les enjeux de pouvoir et de genre. Londa (2005) examine l'impact du mouvement féministe sur la recherche biomédicale. Elle soutient que, avant l'avènement du féminisme, la recherche médicale était principalement orientée vers les problèmes de santé des hommes, négligeant ceux des femmes. L'article analyse comment le féminisme a contribué à une réorientation de la recherche pour inclure davantage les questions de santé féminine.

Ghanem (2004) aborde l'hyménoplastie comme un outil de conformité sociale mais, son étude reste descriptive et n'examine pas suffisamment les résistances féminines émergentes contre cette norme. Or, les récits de jeunes femmes qui contestent l'hyménoplastie ou qui revendiquent leur autonomie corporelle sont essentiels pour comprendre les transformations des dynamiques de genre. Salle (2017) explore l'évolution des discours médicaux sur le corps féminin, mais son travail ne questionne pas directement la manière dont les jeunes filles intègrent ou rejettent ces discours en lien avec la pression sociale pour restaurer la virginité. L'étude de Schiebinger

(2005) met en lumière l'impact du féminisme sur la médecine, mais elle ne tient pas compte des développements récents, notamment l'influence des mouvements féministes numériques et des réseaux sociaux dans la remise en question de l'hyménoplastie.

Malgré la richesse des études précédentes sur l'hyménoplastie, il existe des lacunes qui subsistent dans le débat académique, rendant nécessaire une nouvelle investigation du sujet, notamment à travers l'œuvre *Foulard et Hymens* de Mona Eltahawy. Aucune des études précédentes n'intègre une analyse des voix féminines actuelles, notamment celles portées par des figures militantes comme Eltahawy qui dénoncent ouvertement les normes patriarcales sous-jacentes à cette pratique. Cette recherche vise ainsi à combler un vide dans la littérature en articulant une analyse critique, féministe et sociologique de l'hyménoplastie à travers un ouvrage qui incarne une voix engagée contre l'oppression des femmes.

1.3.Approche Sociocritique et Sociologie Critique

L'analyse de l'hyménoplastie comme mécanisme de contrôle social et son impact sur la vie des jeunes filles nécessite un cadre théorique ancré dans la sociocritique et la sociologie critique. Ces approches permettent d'examiner comment les discours sociaux et les structures de pouvoir influencent les représentations du corps féminin et la construction des normes patriarcales. La sociocritique, développée principalement par Claude Duchet *Problèmes de sociocritique* (1979) et Edmond Cros, *La sociocritique*, (2003), propose une lecture des textes littéraires à travers les structures sociales et les idéologies qui les façonnent. Elle analyse comment une œuvre reflète, questionne ou déconstruit les rapports de pouvoir dans une société donnée. Dans le cas de *Foulard et Hymens* de Mona Eltahawy, une approche sociocritique permet d'étudier la manière dont l'auteure déconstruit les normes culturelles et religieuses qui régissent la sexualité féminine, la représentation du corps féminin comme un champ de bataille entre modernité et tradition et le discours féministe comme un outil de

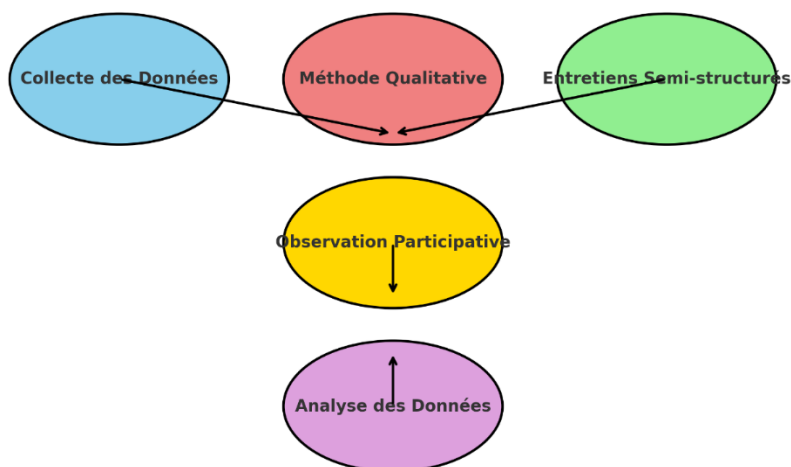
résistance face aux structures patriarcales qui imposent des pratiques comme l'hyménoplastie.

La sociologie critique, inspirée des travaux de Pierre Bourdieu (La domination masculine, 1998) et Michel Foucault (Surveiller et punir, 1975) permet d'examiner comment les institutions sociales, religieuses et politiques renforcent le contrôle du corps des femmes. Pierre Bourdieu analyse la domination masculine comme un système où les rapports de pouvoir sont naturalisés et intégrés à travers l'éducation, la religion et les normes sociales. L'hyménoplastie peut ainsi être perçue comme un instrument de ce système, visant à garantir la conformité des femmes aux attentes patriarcales. Michel Foucault, avec sa notion de

biopolitique, met en évidence la manière dont les sociétés exercent un contrôle sur les corps, en les disciplinant à travers des normes médicales, juridiques et culturelles. L'hyménoplastie, en tant que pratique institutionnalisée, s'inscrit dans cette logique de surveillance et de contrôle du corps féminin. Le cadre théorique basé sur la sociocritique et la sociologie critique permet de décrypter l'hyménoplastie non seulement comme une pratique médicale, mais aussi comme un outil de contrôle social et de reproduction des inégalités de genre. En mobilisant ces théories, cette étude met en lumière la manière dont le roman de base de l'étude dénonce ces mécanismes et propose une résistance féministe face à l'oppression patriarcale.

1.4

Schéma Méthodologique



1.5 Présentation du l'œuvre.

Dans *Foulards et Hymens* : Pourquoi le Moyen-Orient doit faire sa révolution sexuelle (2015), Mona Eltahawy propose une critique radicale du patriarcat et de la misogynie qui sévissent dans les sociétés arabes et musulmanes. À travers son témoignage personnel et une analyse sociopolitique approfondie, elle dénonce l'oppression des femmes et l'obsession pour leur corps, notamment à travers des pratiques telles que

l'hyménoplastie, les mutilations génitales féminines, le harcèlement sexuel et la ségrégation des sexes. L'ouvrage est structuré autour de plusieurs thématiques majeures. L'auteure met en évidence comment les traditions religieuses, les lois et les normes culturelles asservissent les femmes en régulant leur apparence, leur sexualité et leur liberté de mouvement. Le voile, par exemple est analysé comme un symbole à la fois de soumission et d'oppression. De plus, l'auteur, elle-même est victime d'agressions sexuelles, témoigne de la

banalisation du harcèlement et des abus subis par les femmes dans l'espace public, notamment en Égypte. Elle critique les États et les systèmes judiciaires qui ne protègent pas les victimes et laissent les coupables agir en toute impunité. Elle s'attaque à la pression exercée sur les femmes pour préserver leur virginité avant le mariage, illustrée par la demande croissante de l'hyménoplastie, une opération chirurgicale qui vise à reconstruire artificiellement l'hymen. Selon elle, cette pratique reflète le double moral imposé aux femmes et le contrôle patriarcal de leur sexualité.

En plus, l'écrivain défend l'idée que l'émancipation des femmes ne peut se faire sans une remise en question des normes religieuses et sociopolitiques qui restreignent leur autonomie. Elle plaide pour une libération sexuelle et un féminisme radical dans les sociétés arabes, inspiré par les luttes féministes occidentales. À travers un style direct et engagé, *Foullards et Hymens* est un manifeste féministe qui exhorte les femmes arabes à se révolter contre l'oppression et à réclamer leurs droits. Mona Eltahawy n'hésite pas à critiquer aussi bien les gouvernements autoritaires que les traditions religieuses conservatrices qui renforcent les inégalités de genre. Son livre s'inscrit ainsi dans une lutte plus large pour les droits des femmes et la justice sociale au Moyen-Orient et en Afrique du Nord.

1.5.1 Elaboration sur L'Hyménoplastie et Enjeux Socioculturels

L'hyménoplastie est une intervention chirurgicale qui vise à reconstruire l'hymen, une fine membrane située à l'entrée du vagin. Cette opération, également appelée hyménorrhaphie est généralement pratiquée pour simuler une virginité intacte avant le mariage. D'un point de vue médical, elle consiste à suturer les fragments de l'hymen déchiré ou à utiliser des tissus vaginaux pour recréer une membrane artificielle Pieters et al (2020). Bien que cette procédure soit présentée comme une solution aux attentes sociales pesant sur les femmes, elle soulève des questions éthiques et sociétales. Certains praticiens la considèrent comme une réponse pragmatique aux pressions culturelles, tandis que d'autres la dénoncent

comme une pratique rétrograde qui perpétue l'oppression des femmes Ben Hamida, (2018).

En ce qui concerne la place de la virginité féminine dans les sociétés patriarcales, dans de nombreuses sociétés patriarcales, la virginité féminine est perçue comme un symbole d'honneur, de pureté et de respectabilité familiale. L'attente selon laquelle une femme doit être vierge avant le mariage repose sur des normes sociales et religieuses profondément ancrées. Bourdieu (1998 : 89) explique que « *le corps féminin est souvent socialisé comme un espace de contrôle et d'honneur, où la virginité devient une valeur marchande dans les stratégies matrimoniales* ». Cette perception est particulièrement marquée dans les sociétés conservatrices, où la sexualité féminine est strictement régulée. Eltahawy, dans *Foullard et Hymens* (2015), critique cette obsession de la virginité, affirmant que « l'honneur des familles repose de manière injuste sur une fine membrane qui ne devrait avoir aucune incidence sur la valeur d'une femme ». (55)

Cependant, l'hyménoplastie ne se limite pas à une simple intervention médicale ; elle s'inscrit dans une logique de contrôle social visant à conformer les femmes aux attentes patriarcales. Michel Foucault (1975), dans *Surveiller et punir*, décrit comment le pouvoir s'exerce sur les corps à travers des dispositifs de surveillance et de discipline. L'hyménoplastie en est un exemple frappant. Elle renforce la pression sociale sur les femmes en les obligeant à répondre aux normes de chasteté imposées. Elle perpétue l'idée que la sexualité féminine doit être dissimulée et contrôlée. Et elle donne un pouvoir aux institutions médicales et familiales pour réguler la sexualité féminine, réduisant ainsi l'autonomie des femmes sur leur propre corps Azad & Calves, (2021). Mais, les critiques féministes dénoncent cette pratique comme une forme moderne d'oppression, où la chirurgie est utilisée pour effacer les traces de la transgression sociale au lieu de remettre en question les normes elles-mêmes Abu-Lughod, (2013).

Dans le contexte du lien entre l'hyménoplastie et l'honneur familial, ceci est souvent lié à la virginité féminine dans les sociétés traditionnelles. Une femme considérée comme non vierge avant le mariage peut être

rejetée par sa famille, subir des violences, voire être victime de crimes dits « d'honneur » Kulczycki & Windle, (2011). Fatima Mernissi (1991) dans *Le Harem politique* souligne que « l'honneur masculin est défini en grande partie par le comportement sexuel des femmes de la famille, créant ainsi une pression constante sur elles ». (34). Dans ce contexte, l'hyménoplastie devient un moyen de préserver l'honneur familial, même au prix d'un mensonge. Pourtant, comme le souligne Eltahawy (2015), cette logique perpétue un système injuste où les femmes doivent porter le poids des traditions sans que la société ne remette en question la valeur de ces normes.

Bref, l'hyménoplastie est une pratique à la croisée des enjeux médicaux, sociaux et culturels. Elle illustre la persistance des normes patriarcales qui pèsent sur la sexualité féminine et soulève des questions sur la nécessité de réformer les mentalités plutôt que d'adapter les corps aux exigences d'une société conservatrice.

1.6 Analyse Textuelle : L'Hyménoplastie et la Critique des Normes de Pureté Féminine

L'une des thématiques centrales abordées par l'auteure dans *Foulards et Hymens* est l'hyménoplastie, une chirurgie de reconstruction de l'hymen destinée à restaurer une « virginité » physique. Cette pratique, largement répandue dans certains pays du Maghreb et en Égypte, met en évidence la pression sociale exercée sur les femmes quant à leur chasteté et leur conformité aux normes patriarcales. Eltahawy s'inscrit dans une critique féministe de cette chirurgie en la comparant aux mutilations génitales féminines, bien que celle-ci soit considérée comme « bénéfique » par certaines institutions médicales. Comme l'explique Martin Winckler (2009), l'hyménoplastie, bien que pratiquée dans le cadre de la chirurgie esthétique est perçue différemment des interventions de réhabilitation clitoridienne, révélant ainsi une hiérarchie implicite dans la manière dont la société traite le corps des femmes. Cette hiérarchie est également soulignée par Rahou (2013) qui note que si des pays comme la Tunisie, le Maroc et l'Égypte sont parmi les plus concernés par cette

pratique, celle-ci est également présente en Asie, notamment en Chine et en Inde Prakash, (2009) ; Wei et al. (2015).

De plus, l'existence de cette chirurgie démontre à quel point la « virginité » est un concept socialement construit et instrumentalisé pour contrôler les femmes. L'auteur critique ouvertement la manière dont la religion et la tradition servent de justification à ces pratiques. Elle affirme que : « *Je crois que la religion islamique encourage la discrimination et son influence est directement liée à la promotion d'une culture misogyne dans les pays arabes.* » (Eltahawy, 2015, p. 23). Elle démontre que dans plusieurs pays, les lois islamiques appliquées dans les tribunaux familiaux permettent la perpétuation d'injustices telles que le mariage forcé, le viol conjugal et l'impunité des violences sexuelles. Elle dénonce également l'inaction des gouvernements face aux abus perpétrés par les figures d'autorité, ce qui renforce la subordination des femmes dans la sphère publique et privée.

L'auteure dénonce l'hyménoplastie comme une pratique qui symbolise la domination patriarcale exercée sur le corps des femmes dans les sociétés arabes et musulmanes. À travers son livre, elle critique cette opération chirurgicale qui vise à reconstruire l'hymen et qui est perçue comme un moyen de restaurer une « virginité » socialement exigée avant le mariage. L'hyménoplastie est ainsi mise en parallèle avec d'autres interventions chirurgicales sur les organes génitaux féminins, notamment la réhabilitation clitoridienne après des mutilations génitales. Cette opposition entre les deux pratiques souligne un paradoxe : alors que la reconstruction du clitoris est valorisée dans certaines sphères médicales comme une forme de réparation et de justice envers les femmes victimes d'excision, l'hyménoplastie, elle, est perçue comme une soumission aux normes patriarcales. Eltahawy va plus loin en affirmant que cette obsession pour la virginité et la « pureté » féminine n'est pas qu'un phénomène médical ou culturel, mais qu'elle est directement alimentée par des structures religieuses et politiques oppressives. Elle écrit : « *Je crois que la religion islamique encourage la discrimination et son influence est directement liée à la promotion d'une culture misogyne dans*

les pays arabes » (Foulards et Hymens, 2015:23). À travers cette affirmation, l'auteure dénonce le rôle de la religion dans l'institutionnalisation des inégalités de genre et dans la légitimation des violences faites aux femmes. Elle accuse les gouvernements des pays arabes de maintenir ces normes pour renforcer leur emprise sur les citoyennes et éviter toute remise en question du patriarcat.

Eltahawy souligne que l'hyménoplastie n'est pas un simple choix individuel, mais une conséquence directe de la pression exercée sur les femmes dès leur plus jeune âge. Elle explique que les hommes d'État égyptiens abusent des femmes en toute impunité, bénéficiant du silence complice des institutions judiciaires et religieuses. Selon elle, la loi islamique, appliquée dans de nombreux pays arabes, ne protège pas réellement les femmes mais, au contraire, perpétue les violences sexuelles et les inégalités. Elle illustre cette réalité à travers des exemples précis, évoquant notamment la façon dont les tribunaux religieux traitent les affaires familiales. Elle écrit : « *Ces lois sont censées protéger les familles mais ne parviennent pas à prévenir des atrocités telles que le mariage des enfants, le viol conjugal, le harcèlement sexuel et la violence domestique.* » (Foulards et Hymens, p. 67). Ici, l'écrivain aborde l'hypocrisie des États arabes qui prétendent défendre les valeurs familiales tout en permettant aux hommes d'exercer un contrôle absolu sur les femmes. L'absence de répression des violences sexuelles, combinée aux exigences de virginité avant le mariage, place les femmes dans une situation de vulnérabilité extrême. L'hyménoplastie devient alors une réponse contrainte, une solution désespérée pour échapper à la honte et au rejet social.

Néanmoins, Eltahawy déplore le silence qui entoure ces questions dans les sociétés arabes, mais aussi dans les cercles féministes occidentaux. Elle estime que les femmes arabes, ayant grandi dans des sociétés qui récompensent l'obéissance, ont souvent du mal à exprimer leur révolte. Elle écrit : « *Quand il est question de misogynie, les femmes arabes et les libéraux occidentaux restent largement silencieux.* » (Foulards et Hymens, 2015:53). Cette citation met en évidence deux types de

silence. Celui des femmes arabes qui, par crainte de représailles ou par conditionnement culturel, hésitent à dénoncer les violences qu'elles subissent. Et celui des intellectuels occidentaux, qui évitent souvent de critiquer les sociétés arabes par peur d'être accusés de racisme ou de néo-colonialisme. Pour l'auteur, cette attitude contribue à renforcer l'impunité des agresseurs et à prolonger la souffrance des femmes. Elle appelle donc à une prise de parole sans compromis, à une dénonciation radicale des systèmes oppressifs qu'ils soient religieux, politiques ou culturels. À travers le texte, l'auteur présente une analyse percutante de l'hyménoplastie en tant que symptôme des structures patriarcales gravement enracinées dans les sociétés arabes. Le livre est loin d'être un simple acte médical, est le reflet d'une culture qui exige des femmes qu'elles se conforment à des normes de pureté arbitraires, sous peine de subir la honte et l'exclusion sociale. Son ouvrage ne se limite pas à une critique de l'hyménoplastie ; il s'inscrit dans une dénonciation plus large des violences faites aux femmes et du silence complice des États et des institutions religieuses.

1.7 Discussion : Le corps féminin comme lieu de contrôle et de résistance

Le corps féminin a historiquement été un espace de domination et de contrôle, mais aussi un site de résistance contre les normes patriarcales. Pierre Bourdieu (1998), dans *La domination masculine*, explique que le corps des femmes est souvent instrumentalisé pour perpétuer un ordre social où elles sont reléguées à des rôles de soumission. Michel Foucault (1975) dans *Surveiller et punir*, développe l'idée que le contrôle des corps, y compris par des pratiques médicales ou culturelles, sert à imposer une discipline sociale. L'hyménoplastie illustre cette dynamique car elle est utilisée comme un outil pour maintenir l'idée d'un corps féminin « pur » et conforme aux attentes sociales. Cependant, certaines femmes détournent cette pratique en l'utilisant stratégiquement pour récupérer une liberté qui leur a été refusée. Eltahawy (2015), montre comment les femmes du monde arabe réinterprètent ces normes et revendiquent leur droit à disposer librement de leur corps,

illustrant ainsi la résistance féminine face aux oppressions sociétales.

En plus, le concept de « capital de virginité » repose sur l'idée que la virginité féminine est une valeur sociale et symbolique essentielle dans de nombreuses cultures patriarcales. Ce concept est lié à la théorie du capital social développée par Bourdieu, où la virginité est perçue comme un atout qui assure à une femme une meilleure position sociale et matrimoniale. Mernissi (1991) explique que la virginité féminine est souvent associée à l'honneur familial et au contrôle de la sexualité des femmes. Cette pression sociale pousse de nombreuses jeunes filles à recourir à des pratiques comme l'hyméoplastie afin d'échapper aux stigmates de la « défloration » hors mariage. Nawel Ben Hamida (2018) souligne que cette pression est particulièrement forte dans les sociétés où la pureté féminine conditionne l'acceptabilité sociale et matrimoniale des jeunes femmes. Cette pression engendre une double contrainte, d'un côté, les jeunes filles doivent répondre aux attentes de chasteté, et de l'autre, elles cherchent à revendiquer leur autonomie corporelle. Cette tension alimente des mouvements féministes qui dénoncent la soumission des femmes à un idéal de pureté irréaliste et défendent leur droit à la liberté sexuelle et corporelle.

Sur le plan de l'impact sur la vie des jeunes filles : contraintes et dilemmes identitaires, Eltahawy met en lumière les pressions sociales, culturelles et familiales qui pèsent sur les jeunes filles en raison de l'obsession de la virginité. Dès leur plus jeune âge, les filles sont éduquées dans la peur d'être perçues comme impures ou indignes si elles ne répondent pas aux normes de chasteté imposées par la société. Eltahawy souligne ce paradoxe en écrivant : « *Pourquoi le corps féminin est-il le champ de bataille de l'honneur familial ? Pourquoi n'apprend-on pas aux garçons la responsabilité de leur sexualité ?* » (Foulard et Hymens, p. 102). Cette citation illustre bien l'injustice du fardeau imposé aux jeunes filles, qui doivent porter le poids des attentes patriarcales tandis que les hommes jouissent d'une liberté bien plus grande. L'hyméoplastie apparaît alors comme une solution ambiguë pour celles qui craignent le

rejet familial ou social. D'un côté, elle leur permet de « restaurer » une virginité perçue comme nécessaire au mariage ; de l'autre, elle renforce leur soumission aux normes patriarcales. Eltahawy met en évidence ce dilemme en expliquant que : « *Certaines jeunes filles acceptent cette chirurgie non pas par choix, mais par survie. Elles se retrouvent piégées entre leur désir de liberté et la crainte d'être ostracisées.* » (Foulard et Hymens, p. 145). Cette dualité crée une profonde crise identitaire où les femmes doivent naviguer entre leur propre volonté et les injonctions de leur environnement. L'auteure montre également que cette pression a des conséquences psychologiques graves, allant de la perte de confiance en soi à l'anxiété liée à la révélation éventuelle du « secret » de l'opération.

1.7.1 La résistance et l'émancipation féminine face à ces normes

Malgré les oppressions décrites, Foulard et Hymens est aussi un manifeste de résistance et d'émancipation féminine. Eltahawy met en avant les voix de nombreuses femmes qui rejettent ces normes et revendiquent leur autonomie corporelle. Elle écrit ainsi : « *Nous n'avons pas besoin d'être sauvées. Nous avons besoin que vous arrêtiez de nous dire comment nous devons exister.* » (Foulard et Hymens, p. 188). Cette affirmation puissante reflète la volonté des femmes de s'affranchir des diktats patriarcaux et de redéfinir leurs propres valeurs. L'auteure met en avant plusieurs formes de résistance, allant de la réappropriation du discours sur la sexualité à l'engagement militant contre les pratiques oppressives. Elle illustre comment certaines jeunes filles, malgré la pression familiale, choisissent de ne pas se soumettre à l'hyméoplastie, refusant ainsi d'adhérer aux standards de pureté qui leur sont imposés. « *C'est en brisant le silence et en revendiquant nos droits que nous pourrions enfin nous libérer de ces chaînes invisibles.* » (Foulard et Hymens, p. 210), affirme-t-elle, soulignant l'importance du discours féministe dans cette lutte. Eltahawy évoque également le rôle des réseaux sociaux et du cyberactivisme dans la contestation des normes patriarcales. Elle cite des témoignages de jeunes filles qui, à travers des plateformes numériques, dénoncent la pression qu'elles subissent et encouragent

d'autres à résister. « *Internet est devenu une arme pour celles qui n'ont pas de voix. C'est un espace où nous pouvons exister sans filtre sans peur.* » (Foulard et Hymens, p. 217). Enfin, l'auteure insiste sur la nécessité d'une transformation sociale et politique pour permettre aux femmes de s'émanciper durablement. Pour elle, la lutte contre

l'hyménoplastie et les normes de virginité ne peut être isolée des combats plus larges pour l'égalité des sexes. À travers son ouvrage, Mona Eltahawy déconstruit les mythes autour de la virginité et dénonce la violence symbolique exercée sur le corps féminin. Tout en exposant les dilemmes et contraintes auxquels les jeunes filles font face.

1.8. Proposition d'Alternative et Plaidoyer pour l'Égalité des Genres



L'égalité des genres ne peut être atteinte sans une refonte des structures sociopolitiques, économiques et culturelles qui perpétuent la domination patriarcale. Inspirée des idées de Mona Eltahawy et comme indique dans le schéma, cette section propose des alternatives concrètes pour garantir l'autonomie des femmes et lutter contre les discriminations systémiques.

1. Réformes Législatives et Politiques pour l'Égalité : Les gouvernements ont un rôle clé à jouer dans l'éradication des violences de genre et la promotion des droits des femmes.

- a) Renforcement des lois contre les violences faites aux femmes
- b) Interdiction des tests de virginité et des pratiques médicales discriminatoires.
- c) Criminalisation effective des mutilations génitales féminines (MGF) avec des sanctions sévères contre les auteurs et complices.
- d) Lutte contre le harcèlement sexuel à travers des campagnes de sensibilisation et l'adoption de lois strictes.

1.2. Accès égal à la citoyenneté et aux droits fondamentaux :

- a) Élimination des lois sur la tutelle masculine, permettant aux femmes de voyager, d'étudier et de travailler sans autorisation.
- b) Parité en politique, avec un quota obligatoire de femmes dans les postes de décision.
- c) Droits reproductifs garantis, y compris l'accès à la contraception et à l'avortement sécurisé.

2. Éducation et Déconstruction des Stéréotypes : L'éducation est un levier fondamental pour transformer les mentalités et déconstruire les normes oppressives.

2.1. Réforme des programmes scolaires

- a) Inclure l'éducation à l'égalité des genres dans les manuels scolaires.
- b) Enseigner les contributions des femmes dans l'histoire, la science et la politique.

c) Démystifier les mythes liés à la sexualité féminine pour contrer les tabous et fausses croyances.

2.2. Sensibilisation des garçons et des hommes

- a) Éducation à la masculinité positive pour déconstruire les modèles de domination.
- b) Engagement des hommes dans la lutte pour l'égalité en tant qu'alliés féministes.

3. Autonomisation Économique des Femmes : L'indépendance financière est une condition essentielle de l'émancipation féminine.

3.1. Encouragement de l'entrepreneuriat féminin

- a) Création de fonds de soutien aux entreprises dirigées par des femmes.
- b) Réduction des barrières administratives et financières pour favoriser l'accès des femmes aux prêts et investissements.

3.2. Réduction des inégalités salariales

- a) Instauration de lois sur l'égalité salariale dans tous les secteurs.
- b) Transparence sur les salaires pour empêcher la discrimination.

4. Réforme des Institutions Religieuses et Médicales : Les institutions religieuses et médicales doivent évoluer pour respecter les droits des femmes.

4.1. Lecture progressiste des textes religieux

- a) Encourager une interprétation égalitaire des dogmes religieux.
- b) Soutenir les leaders religieux progressistes qui défendent les droits des femmes.

4.2. Éthique médicale féministe

- a) Sensibiliser les médecins aux violences gynécologiques et obstétricales.
- b) Former les professionnels de santé à une approche respectueuse des choix des femmes.

L'égalité des genres ne sera pas atteinte par de simples réformes symboliques. Il faut une transformation radicale des structures

patriarcales, accompagnée d'une mobilisation collective. Chaque femme et chaque homme à un rôle à jouer pour bâtir un monde où l'émancipation féminine ne sera plus une revendication, mais une réalité inaliénable.

1.9 Conclusion

L'analyse des œuvres de Mona Eltahawy révèle une dénonciation incisive des normes patriarcales qui perpétuent l'oppression des femmes, notamment à travers des pratiques telles que l'hyménoplastie, les mutilations génitales féminines et la restriction des libertés individuelles. Son travail met en lumière la manière dont les institutions religieuses, médicales et politiques participent au contrôle du corps féminin, légitimant ainsi des inégalités profondément ancrées. De plus, ses écrits insistent sur la nécessité de briser le silence et de déconstruire les mythes qui entourent la pureté féminine, la sexualité et la soumission des femmes dans les sociétés arabes et africaines. Sans doute, les analyses de ce dernier ont contribué à ouvrir le débat sur des sujets longtemps considérés comme tabous dans les sociétés arabes et africaines. Ses œuvres ont mis en lumière des réalités souvent passées sous silence, telles que l'exploitation sexuelle des femmes par les régimes autoritaires, la culture du viol et le contrôle du corps féminin par le biais de la religion et des traditions. En abordant des thèmes comme l'hyménoplastie, la sexualité féminine et les violences de genre, elle encourage une nouvelle génération de féministes africaines et arabes à s'exprimer et à revendiquer leurs droits. C'est ainsi qu'il est devenu évident que l'impact des écrits d'Eltahawy se fait ressentir dans plusieurs pays d'Afrique du Nord où des activistes féministes utilisent ses idées pour contester les lois patriarcales et exiger des réformes législatives. En Tunisie et au Maroc, des mouvements pour l'abolition des tests de virginité et contre la criminalisation de l'avortement ont trouvé un écho dans ses revendications. Ses ouvrages sont également lus dans des contextes subsahariens où les femmes luttent contre des formes spécifiques d'oppression, comme les mariages précoces et les violences basées sur le genre.

Dans l'étude, nous avons établi que les réflexions de Mona Eltahawy ont des implications majeures pour la lutte féministe et les politiques de genre. D'une part, elles appellent à une réforme des lois pour garantir l'égalité des droits, criminaliser les violences basées sur le genre et assurer l'accès des femmes aux espaces de décision. D'autre part, elles soulignent l'urgence d'un changement

socioculturel qui valorise l'émancipation féminine et déconstruit les stéréotypes oppressifs. L'éducation, les médias et les organisations de la société civile doivent jouer un rôle central dans la sensibilisation aux enjeux de genre et dans la promotion d'une justice sociale qui reconnaît pleinement les droits des femmes.

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EFFECTS OF DIETARY SUPPLEMENTATION OF *KIGELIA AFRICANA* FRUITS TO RABBITS BUCKS FED COTTONSEED MEAL ON GROWTH PERFORMANCE, HEAMATOLOGICAL AND SERUM BIOCHEMISTRY

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Abstract

This study was to evaluate the growth performance, heamatology and serum biochemistry indices of rabbit bucks fed cottonseed meal (CSM) diets supplemented with Kigelia africana fruits (KAF) as replacement for soybean meal. Sixty (60) rabbit bucks were divided into five (5) groups with twelve (12) replicates in a completely randomized design. Each treatment group had: (1) 100% SBM - CSM-KAF (2) 100% CSM- KAF, (3) 100% CSM + KAF powder, (4) 100% CSM + KAF extract, (5) 100% CSC +T₃ +T₄ (blend mixtures). The experiment lasted 84 days during which feed and water were given ad libitum. Diets were formulated to meet the nutrient requirements for rabbits and other management practices were strictly observed. After weeks of adaptation, growth parameters were determined, and blood samples were taken and analyzed. Rabbits fed T1 had significantly ($P<0.05$) higher feed intake and not significantly ($P>0.05$) different from T2, T4 and T5. T3 had significantly ($P<0.05$) lowest value. Heamatological parameters examined were significantly ($P<0.05$) different across the treatments in which PCV, RBC Hb and WBC of T1, T4 and T5 were significantly ($P<0.05$) increased but lower in T2. Serum parameters were also significantly ($P<0.05$) influenced by dietary treatments and levels of serum enzymes (AST and ALT) were elevated in supplemented groups. The study concluded that KAF supplementation improved utilization of CSM as feed protein sources without compromising the performance and health status. Therefore, farmers who intend raising rabbits for meat purposes must adequately supplement their feed with KAF powder at a dose of 100g/100kg of feed.

Keywords: Rabbit bucks, Cottonseed meal, *Kigelia africana* fruits, Blood parameters

1. Introduction

The global challenges in animal husbandry, marked by feed resources and escalating prices have compelled animal nutritionists to explore cost effective alternatives. Cottonseed cake stands out as a promising substitute for soybean meal, renowned for its protein and fibre content. Despite its potential, CSC has been underutilized in non-ruminant diets due to the presence of gossypol, a polyphenolic compound with physiological implications (Amao and Akanbi 2017). Gossypol originating from cotton plants, readily binds to various substances

including minerals and amino acids. Meanwhile *Kigelia africana* recognize for its application in traditional medicine possessed several metabolites alkaloids, flavonoids, phenols, saponins, tannins, oxalate, terpenoids, steroids etc (Ojediran et al., 2024) offers diverse benefits such as anticancer, antiulcer, antioxidant properties and more (Alagbe et al., 2020). The aim of this study was to investigate dietary supplementation of *Kigelia africana* fruits to cottonseed meal on growth performance, haematological and serum components as vital indicators of an organism's physiological, nutritional and health status.

2. Literature review

The effect of the methanolic extracts of *K. africana* fruits supplementation resulted in the decrease in the tumor size and the increase in the average body weight and the mean survival time and thereby increase life span of EAC tumor bearing mice (Sainadh et al., 2013). Administration of the methanolic fruit extracts of *K. africana* significantly ($p < 0.05$) inhibited the formation of thiobarbituric acid-reactive substances (TBARS) dose-dependently against the pro-oxidant-induced oxidative stress, and this shows the potential use of the plant for the treatment of different diseases as a result of its scavenging activities. In the vitro antioxidant assays, various researchers with *K. africana* fruits also stimulated the proliferation of cells

3. Materials and Methods

Experimental site

The experiment was conducted at the rabbit research and production unit of the teaching and research farm, Osun State University, College of Agricultural Sciences and Management Ejigbo campus, Ejigbo, Osun State Nigeria. The university is located at coordinates; 7°45'42"N 4°36'04"E of latitude and longitude in a forest zone of Nigeria.

Materials preparation

Cottonseed/cottonseed meal

Cottonseeds meal (CSM) was obtained from a cotton milling industry in Northern part of Nigeria, the materials were sundried, the initial moisture content was determined after drying until constant weight at >99% in hot-air oven then pulverized and stored for chemical analysis.

Kigelia africana fruits

The matured ripe fruits of *K. africana* were collected based on ethno-pharmacological information from the forest in Southern part of Nigeria. The botanical identification of the plant and fruits was done at the Forestry Research Institute of Nigeria, Ibadan where a voucher specimen number- FHI/08257 was recorded for ease of identification. Fruits thoroughly washed with distilled water to remove soil and other bound particles, air dried separately until a constant weight was obtained and made into powder using a pulverizer tagged 'KAF power' Samples were later stored in a well labeled airtight container and kept for further analysis.

100g of ground sample (*Kigelia africana* fruits) was mixed with water (1:1) dissolved in 1000 ml water, stirred continuously and kept in the refrigerator for 48 hours. The extract was filtered using Whatman filter paper No.1 to obtain filtrate. The filtrate obtained called aqueous extract.

KAF-Blend mixtures were obtained by mixing of powder and extract KAF at ratio of 1:1 on rotatory shaker for 10 minutes.

Phytochemical analysis of KAF (Table 1) for tannins, alkaloids, saponins, flavonoids, phenols, oxalate, glycosides, steroids and terpenoids were estimated using methods described by Atamgba, *et al.* (2015) and Odebiyi, *et al.* (1978). Proximate compositions of CSC, KAF samples were analyzed according to AOAC, (1990) check Table II. All data generated were subjected to one way analysis of variance (ANOVA) and significant means separated by Duncan's multiple range test of the same statistical package.

Table 1. Chemical Compositions of test ingredients and gossypol levels

Composition	SBM (%)	CSC (%)	KAF (%)	SEM
Moisture	8.12 ^b	5.37 ^c	9.80 ^a	0.54
Crude Protein	42.50 ^a	37.45 ^b	16.31 ^c	0.58
Crude Fibre	7.98 ^c	11.60 ^b	21.02 ^a	0.51
Ether Extract	6.10 ^c	8.15 ^b	9.28 ^a	1.65
Ash	4.80 ^c	5.54 ^b	7.57 ^a	0.14
NFE	28.50 ^c	31.89 ^b	36.20 ^a	0.83
Calcium	2.82 ^a	2.45 ^b	2.14 ^c	0.21
Phosphorus	5.50 ^b	12.70 ^a	3.36 ^c	0.45
Methionine	6.80	5.50	-	-
Threonine	28.90	20.50	-	-
Lysine	17.80	14.50	-	-
Leucine	34.50	21.30	-	-
Isoleucine	20.10	16.50	-	-
Arginine	24.10	23.69	-	-

SBM = soybean meal, CSM = cottonseed meal, KAF= *Kigelia africana* fruits, NFE = Nitrogen Free extract

Phytochemical analysis of Kigelia africana samples

The phytochemical analysis of *Kigelia africana* fruits revealed a positive result of the presence of terpenoids, flavonoids, phenolic compounds, tannins, saponins and reducing sugars (Table 3). The series of extraction carried out showed a quantitative test of the powder fruit having flavonoids. (50.62%), phenolic compounds (108.06%), tannins (126.14%), saponins (22.56%) and reducing sugar (76.89%) while terpenoids showed a negative quantitative

result. The qualitative analysis revealed positive result of terpenoids, flavonoids, phenolic compounds, tannins, saponins, reducing sugar Extract KAF analysed showed a qualitative test of terpenoids:2.34%, Flavonoids:55.42%, Phenolic compound:115.01%, Tannis: 86.65%, Saponis:18.37%, reducing sugar: 80.74%. Except terpenoids that showed negative qualitative result, others revealed positive results. Flavonoids, phenolic compounds and reducing sugars were more in abundance in KAF extract than powder KAF

Table 2: Phytochemical analysis of Kigelia africana fruits. (1000g/mL)

Test/Extraction Samples	Quantitative Powder	Qualitative Powder	Qualitative Extract	Qualitative Extract	Quantitative Blend-mixtures	Qualitative Blend-mixtures
Alkaloids	-	-	-	+	-	-
Terpenoids	-	+	2.34	-	-	-
Flavonoids	50.62 ^c	++	55.42 ^b	++	59.70 ^a	++
Phenolic compounds	108.06 ^c	+++	115.01 ^a	+++	113.08 ^b	++
Tannins	126.14 ^a	+++	86.65 ^c	++	121.09 ^b	++
Saponins	22.56 ^a	++	18.37 ^c	+	20.81 ^b	+++
Reducing sugars	76.89 ^c	++	80.74 ^b	+++	84.23 ^a	+++
SEM	6.22		4.19		5.89	

Animals and management

Sixty (60) rabbit bucks of mixed population aged between 7-8 weeks old were balanced for weight, caged individually and randomly allocated to five dietary treatments containing CSM with or without KAF supplementation in a completely randomized design (CRD). Animal were allowed to adaptation period of two weeks after adaptation animals were subjected to 14 weeks of feeding trial. 12 bucks were allotted to each treatment, and each rabbit serves as

replicates. Table III shows the proximate composition of experimental diets. The CSM replaced soybean meal (SBM) at 0% (T1) and 100% as principal protein sources in the diet of other treatments. Treatment two (T2) was without KAF supplementation. Treatment three (T3) was supplemented with powder of KAF 100g/100kg feed. Treatment four (T4) was supplemented with extract of KAF at 100mg/bodyweight. Treatment five (T5) was blend-mixture of powder and extract KAF supplement

Table 3: Gross composition of experimental diets and calculated nutrients

Ingredients (%)	T1	T2	T3	T4	T5
Maize	43.24	43.24	43.24	43.24	43.24
Soybean meal	20.76	-	-	-	-
Cottonseed cake	-	20.76	20.76	20.76	20.76
Rice husk	21.00	21.00	21.00	21.00	21.00
Brewers dried grain	10.00	10.00	10.00	10.00	10.00
Fish meal 72%)	2.00	2.00	2.00	2.00	2.00
Oyster shell	2.00	2.00	2.00	2.00	2.00
Bone meal	0.25	0.25	0.25	0.25	0.25
Premix	0.25	0.25	0.25	0.25	0.25
Salt	0.20	0.20	0.20	0.20	0.20
Lysine	0.10	0.10	0.10	0.10	0.10
Methionine	0.20	0.20	0.20	0.20	0.20
Total	100	100	100	100	100
Calculated Nutrients					
Crude protein (%)	16.34	15.72	15.72	15.72	15.72
Crude Fibre (%)	10.22	11.57	11.57	11.57	11.57
ME (Kcal/kg)	2582	2436	2436	2436	2436
Lysine	0.86	0.64	0.64	0.64	0.64
Methionine	0.27	0.25	0.25	0.25	0.25

*Premix composition (per kg of diet): vitamin A, 12,500 IU; vitamin D3, 2500 IU; vitamin E, 50.00k3, 2.50mg; vitamin B1, 3.00mg; vitamin B2, 6.00mg; vitamin B6, 6.00mg; niacin, 40mg; calcium pantothenate, 10mg; biotin, 0.08mg; vitamin B12, 0.26mg; folic acid, 1.00mg; chlorine chloride, 300mg; manganese, 100mg; iron, 50mg; zinc, 45mg; copper, 2.00mg; meal. BDG- Brewer's dried grain, ME- Metabolizable Energy, Control T₁ (100% SBM + 0% CSM), T₂ (100% CSM + 0% KAF), T₃ (100% CSM +100% KAF powder), T₄ (100% CSM +100% KAF extract), T₅ (100% CSM +T₃ +T₄)

4. Data collection

Growth Performances

Initial body weight was taken at the beginning of the experiment and subsequently on weekly basis. Final live weight was taken on termination of the experiment. Daily feed intake (DFI) =

(quantity of feed supplied) – left over from the previous day. Weekly weight gain (WWG) = total weight gain/number of weeks of experiment. Feed conversion ratio (FCR) = Average daily feed intake/Average daily weight gain. Average daily weight gain (ADFI) and average weekly weight gain (AWWG) were

computed from variables obtained from weekly weight gain.

Collection of blood samples

At the 12th week of the experiment, three rabbits per replicate were randomly selected from each treatment for blood collection. Blood sample was obtained from the marginal ear vein of the bucks using sterilized needle and syringe. Two (2) ml of blood was collected into each plastic bottle containing anticoagulant, ethylene Diamine Tetracetic Acid (EDTA). Also, 2ml, blood samples for serum biochemical analysis were collected into each plain plastic bottle (i.e without anticoagulant)

Haematological samples determination

The following haematological parameters were analyzed: Packed cell volume (PCV) (%), Hemoglobin concentration (Hb)-(g/dl), Red blood cell count (RBC ($\times 10^9/\text{mm}^3$), white blood cells count (WBC) ($\times 10^6/\text{mm}^3$), Mean corpuscular hemoglobin (MCH), Mean Corpuscular Volume (MCV), Mean corpuscular hemoglobin concentration (MCHC), White blood cell differential count (%) namely monocytes, lymphocytes, neutrophils, eosinophils and basophils. PCV was determined by micro-haematocrit method (Dacie and Lewis, 1991). Hb was determined by the calometry-cyanmethaemoglobin method. RBC counts was determined by improved Neubauer haemocytometer method (Igene and Iboh, 2004). The differential white blood cell (WBC) counts were obtained by making a differential smear stained with Wright's stain and the percentage counts taken for segmented neutrophils and lymphocytes (Dacie and Lewis, 1991).

Serum biochemical samples determination

The following serum parameters were analyzed: serum total protein; albumin (g/dl), globulin (g/dl), urea, creatinine, cholesterol, and serum enzymes activities; (IU/L); aspartate aminotransferase (AST) and alanine-aminotransferase (ALT). Blood samples for serum chemistry were collected into bottles free of any anti-coagulant and centrifuged at 1000 r.p.m for 20 minutes to obtain the serum. Serum protein, albumin and globulin will be analyzed colorimetrically using diagnostic reagent kits

(Real Diagnostikal Reagents, Keszlet, Hungary) Doumas and Briggs, 1972) and cholesterol. Activities of Aspartate aminotransferase (AST), Alanine aminotransferase (ALT) was determined colorimetrically (Reitman and Frankel, 1957).

5. Results and Discussion

Results

The chemical composition of test ingredients: soybean meal (SBM), cottonseed cake (CSM) and *Kigelia africana* fruits (KAF) are presented in Table 2. The crude protein (37.45%) of CSM was significantly ($P < 0.05$) lower than the SBM (42.50%) meanwhile KAF had lowest (16.31%) crude protein and significantly ($P < 0.05$) higher crude fibre (21.02%) and CSC (11.60%). Except crude protein, which was lower in KAF, the moisture content, crude fibre, ether extract, ash and NFE were significantly ($P < 0.05$) higher in KAF composition compared to SBM and CSM. Calcium (2.14%) and Phosphorus (3.36%) in KAF were significantly ($P < 0.05$) reduced however calcium (2.82%) was higher in SBM than CSM (2.45%) while phosphorus (12.70%) was higher in CSM (5.50%) than SBM. Amino acids in CSM had lower values than that of SBM however, arginine (23.69%) was most abundance amino acid in CSM while Phosphorus (12.70%) was the most abundance mineral in CSM. Cottonseed cake used in this experiment had a moisture content of 5.37%. The crude protein value of CSC was 37.45%, the crude fibre was 11.60%, the ether extract was 8.15%, the ash content was 5.54%, and the Nitrogen Free Extract (NFE) was 31.89% while the gossypol content of the CSM was 0.57%. The proximate determination of *Kigelia africana* fruits showed that the moisture content was 9.80%, crude protein was 16.31%, carbohydrate content was 9.28% followed by crude fibre at 21.02%, ether extract at 36.20% and ash was 7.58%. Growth performances of rabbit bucks fed CSM supplemented with *Kigelia africana* fruits Table 4 represented the growth performance of rabbits fed cottonseed meal diet supplemented with or without *Kigelia africana* fruits. Total feed intake per kilogram (TFI/g), Average Daily Feed Intake (ADFI), Feed Conversion Ratio (FCR) and Cost per kilogram weight gain (C/kgWG) were significantly

($P<0.05$) influenced by the dietary treatments while the final weight gain and cost per kilogram of feed were not affected ($P>0.05$) by the dietary treatment. Rabbit bucks fed T1 (soybean meal) had significantly ($P<0.05$) higher total feed intake (TFI/kg) of 4916.80g which is not significantly ($P<0.05$) different from T2, T4 (CSM with *Kigelia africana* extract) and T5 (powder and extract combination). Rabbits fed T3 (CSM with *Kigelia africana* powder

supplementation) however had significantly ($P<0.05$) lower value (4211.20g). The ADFI and FCR followed the same trend as the TFI whereby significant increase ($P<0.05$) ADFI was recorded in T2 (351.29g), T1 (354.60g) and T5 (346.86g) while the least value ($P<0.05$) was observed in T2 (300.80g). The FCR also followed the same trend as ADFI where the lower ($P<0.05$) value was recorded for rabbits fed T3 (4.18).

Table 4: Growth performance of rabbit bucks fed cottonseed meal diet supplemented with *Kigelia africana* fruits.

	T1	T2	T3	T4	T5	SEM
Initial weight (g)	930.44 ^a	881.53 ^{ab}	871.51 ^{ab}	869.29 ^{ab}	892.48 ^{ab}	9.62
Final weight (g)	1905.87	1857.66	1878.30	1846.36	1865.34	10.19
TWG (g)	975.43	976.13	1006.79	977.07	972.86	9.78
ADWG (g)	69.67	69.72	71.91	69.79	69.49	0.80
TFI (g)	4838.40 ^a	4916.80 ^a	4211.20 ^b	4704.00 ^{ab}	4814.00 ^a	86.00
ADFI (g)	345.60 ^a	351.20 ^a	300.80 ^b	336.00 ^{ab}	343.86 ^a	1.54
FCR	4.96 ^a	5.04 ^a	4.18 ^b	4.81 ^{ab}	4.95 ^{ab}	0.12

^{ab} Means with different superscript along the same row are significantly different ($P<0.05$). SEM-Standard Error of Mean, T1- Control (SBM-based diet), T2- Cotton seed meal without *Kigelia africana*, T3- Cotton seed meal with *Kigelia africana* powder, T4- Cotton seed mealwith *Kigelia africana* extract, T5- cottonseed meal with *Kigelia.africana* fruits powder and extract,, TWG-total weight gain. TFI- Total Feed Intake, ADFI- Average Daily Feed Intake, FCR- Feed Conversion Ratio

Haematological parameters rabbit bucks fed cottonseed meal diet supplemented with *Kigelia africana* fruits.

The haematological parameters of rabbit bucks fed cottonseed meal-based diet supplemented with or without *Kigelia africana* fruits is presented in Table 5. All the parameters examined were significantly ($P<0.05$) influenced by the dietary treatments. Significantly higher ($P<0.05$) value for Packed Cell Volume (PCV) were recorded in rabbit bucks fed T1, (44.00%), T4 (43.50%) and T5 (45.80). This is closely preceded by groups of rabbits that received T3, CSM with *Kigelia africana* fruits

powder (39.00%) while a lower value recorded for rabbits fed T2, CSM without *Kigelia africana* fruits (32.00%). The Red Blood Cells and Haemoglobin values had same trend with the PCV. The values of RBC ranges from 3.50 to 4.75 $\times 10^{12}/l$ while haemoglobin ranges from 10.70 to 14.50g/dl. The White Blood Cells (WBC) of rabbits fed T4 significantly ($P<0.05$) increased (6050.00 $\times 10^3/l$) compared to other treatments while the least value was obtained in T2 (25550.00 $\times 10^3/l$). The neutrophils of rabbits fed T3 significantly ($P<0.05$) increased (64.50%) and closely followed by 60.50% in T4 whereas a reduced ($P<0.05$) value (46.50%)

was observed in T2. The lymphocyte values significantly ($P<0.05$) ranges from 49.50 % in T2 to 33.00% in T3. Higher ($P<0.05$) basophils value (2.00%) was observed in T1 while lower value was observed in T4 (0.50) which was not significantly different from T2 and T3 (1.00% each). The monocytes value showed a linear

decrease response from T1 (3.00%) to T4 (0.50%). The eosinophils followed the same trend as the monocytes. The platelets values of rabbits fed T3 and T4 significantly ($P<0.05$) increased (234.50 and 237.00×10^3 respectively) whereas the lowest value was recorded in the control group (197.00×10^3).

Table 5: Haematological parameters of rabbit bucks fed of cottonseed meal diet supplemented with *africana* fruits

Parameters	T1	T2	T3	T4	T5	SEM
PCV (%)	44.00 ^a	32.00 ^c	39.00 ^b	43.50 ^a	45.08 ^a	1.28
RBC ($\times 10^{12}/L$)	4.75 ^a	3.50 ^c	4.30 ^b	4.60 ^{ab}	4.78 ^a	0.13
HB (g/dL)	14.50 ^a	10.70 ^c	12.85 ^b	14.45 ^a	14.52 ^a	0.39
MCH (pg)	30.54 ^b	30.55 ^b	31.10 ^{ab}	31.44 ^a	31.45 ^a	0.14
MCV (fl)	92.59 ^b	91.37 ^{bc}	94.25 ^a	94.63 ^a	94.69 ^a	0.47
MCHC (%)	32.99 ^b	33.44 ^a	33.80 ^a	33.22 ^b	33.54 ^a	0.18
WBC ($\times 10^3/\mu l$)	4.05 ^c	2.55 ^d	4.98 ^b	6.05 ^a	6.09 ^a	0.27
Neutrophil (%)	53.00 ^c	46.50 ^d	64.50 ^a	60.50 ^b	63.05 ^a	1.49
Lymphocytes (%)	41.00 ^b	49.50 ^a	33.00 ^d	38.00 ^c	35.00 ^{bc}	1.38
Basophils (%)	2.00 ^a	1.00 ^b	1.00 ^b	0.50 ^b	0.7 ^{ab}	0.17
Monocytes (%)	3.00 ^a	2.00 ^b	1.00 ^{cd}	0.50 ^d	0.50 ^d	0.19
Eosinophils (%)	1.50 ^a	1.00 ^b	0.00 ^c	0.00 ^c	0.00 ^c	0.12
Platelets($\times 10^3/\mu l$)	197.00 ^c	209.50 ^b	234.50 ^a	237.00 ^a	238.00 ^a	4.59

^{abcd} Means with different superscript along the same row are significantly different ($P<0.05$). SEM- Standard Error of Mean, T1- Control (SBM-based diet), T2- Cottonseed meal without *Kigelia africana*, T3- Cottonseed meal with *Kigelia. africana* powder, T4- Cotton seed meal with *Kigelia africana* extract, T5- CSM with *Kigelia africana* powder and *kigelia. africana* extract, PCV- Packed Cell Volume, RBC- Red Blood Cell, HB- Haemoglobin,,MCH- Mean Corpuscular Haemoglobin, MCV-Mean Corpuscular Volume, MCHC- Mean Corpuscular Haemoglobin Concentration, WBC- White Blood Cells

Serum biochemistry of rabbit bucks fed cottonseed meal diet supplemented with *Kigelia africana* fruits.

The serum biochemistry of rabbit bucks fed cottonseed meal diet supplemented with or without *Kigelia africana* fruit is shown in Table 6. All the parameters examined were significantly ($P<0.05$) different. Higher ($P<0.05$) value of Aspartate aminotransferase (AST) was recorded in rabbits fed T3 i.e CSC with *Kigelia*

africana fruit powder ($35.50IU/L$) while significantly lower value was observed in rabbits fed T2, CSC without *Kigelia africana* fruit ($19.00IU/L$). Elevated ($P<0.05$) value of Alanine transaminase (ALT) was observed in rabbits fed T3 ($48.50IU/L$), closely followed by T4 (34.50). Significant ($P<0.05$) lower value was however observed in T1.

The values of Total Protein (TP) and Albumin (ALB) were significantly elevated in groups of

rabbits fed diet T1, T2 and T4. Globulin of rabbit fed T4 (28.00mg/dL) significantly ($P<0.05$) increased, however, not different ($P>0.05$) from T2 (26.50mg/dL). Lower ($P<0.05$) globulin value was recorded for T1 (21.50mg/dL) which is not different ($P>0.05$) from T3 (24.50mg/dL). Elevated ($P<0.05$) value of urea was recorded in rabbits fed T2 (51.70mg/dL), however, other dietary treatments significantly reduced ($P<0.05$). Creatinine level of rabbits fed T3, T4 and T5 was significantly higher compared to other groups. The cholesterol content of rabbits in T2 and T4 were significantly ($P<0.05$). higher (104.20mg/dL) and T4 (98.65mg/dL) while lower values ($P<0.05$) were observed for T1 (78.35mg/dL), T3 (82.65mg/dL) and T5 (76.82mg/dL).

Discussions

Proximate composition of Cottonseed cake and experimental diets

The result of proximate composition of cottonseed cakes as indicated in this study uncovered CSM as an affordable alternative for soybean meal in feeding rabbits. The proximate composition of CSM revealed 5.37% moisture, 37.45% CP, 11.60% CF, 8.15% EE, 5.54% ash and 31.89%NFE. These results contradicted that of Jibrin *et al.* (2020) who observed 3.2% MC, 26.02%CP, 14.16%CF, 3.2% lipid concentration, 6.9% ash and 46.2% NFE. The CP obtained in the present study is higher than that of earlier researchers 26.02% (Jibrin *et al.*, 2020) and 24.81% (Marili *et al.*, 2021). The variances observed in the results could probably be due to different varieties of CSM, processing and oil extraction methods employed. Reduced moisture content increased crude protein and ash observed in this study compared to other researchers (Jibrin *et al.*, 2020; Marili *et al.*, 2021) could be due to variety of seed, storage method and temperature. The crude protein is determined by amount of de-hulling and oil extraction efficiency. Dowd *et al.* (2010) and Yu *et al.* (2012) reported that nitrogen fertilization increased nitrogen levels in cottonseed with altered amino acid concentration. In comparison to other oil seed cakes, cottonseed cake has relatively high arginine and phosphorus content. **Lysine** is the most limiting amino acid

in cottonseed meal (Sastry, 2020). The values of crude protein observed for the experimental diets were slightly lower than those recommended by Fielding (1991). However, most of crude protein were similar to 16% recommended by NCPA, (1995) for maximum growth and were in agreement with those reported by Arowolo *et al.*, (2011). The values for crude fibre of the experimental diets ranged from 8.15% to 13.24% which were lower than the recommended values of 13%-14% by FAO, (2012) for mature rabbits but similar to those reported by Adeyemo and Longe, (2007) for rabbits. The ether extract, which is a measure of essential fatty acids was higher than 2% recommended by NCPA (2002) and Arowolo *et al.*, (2011), the high ether extract values may be as a result of oil residue present in the CSC used in the diets.

Phytochemical Analysis of *Kigelia africana*

The phytochemical analysis revealed the presence of alkaloids, terpenoids, flavonoids, phenolic compounds tannin, saponin, reducing sugars. In contrast to the present result, Jibrin *et al.* (2020) discovered alkaloids, Kone *et al.* (2021) detected polyphenols, catechin tannins, alkaloids and flavonoids. The difference in the photochemical screening result could be consequence of protocols of detection, region of fruit collection in terms of soil and temperature, storage and temperature of fruits. Moreover, contrary to the reports of Kone *et al.*, (2021) and Saini *et al.*, (2013), saponins were detected in the fruit of kigelia in this study. This result was in consistent with that of Fagbohun *et al.* (2020) and Ojediran *et al* (2024). The variance in the results could be attributed to the environment and the detection techniques used. All the biologically active compounds detected in Kigelia fruits especially flavonoids and polyphenols make the fruit suitable as an antioxidant. Ojediran *et al* (2024) reported and found that phenolic compound was most concentrated followed by flavonoids, tannins triterpenes, steroids, alkaloids, saponins and glycosides. The presence of these chemical constituents in KAF indicates that it can be employed as an antioxidant supplement in animal diets

Performance characteristics of cottonseed cake-based diet supplemented with *K. africana* fruits.

The results of TFI and ADFI from the present experiment showed CSM diet supplemented with *K. africana* fruits extract improved feed intake of rabbits as well as SBM-based diet. This result disagrees with earlier report of Amao *et al.* (2012) who observed non-significance effect on average total weight, average weekly weight, average weekly feed intake and feed efficiency of pre-pubertal rabbit bucks fed CSM diet supplemented with vitamin E. Rabbits fed CSM-diet supplemented with *K. africana* fruit powder had better FCR which could be relative to a numerical increase observed in weight gain and reduced feed intake. The aqueous extract of the fruit showed higher potency effect over the powdery form.

The non-significance of final weight and weight gain and concurrent reduction in feed intake and better FCR is an indication that dietary supplementation of CSM-diet with *K. africana* fruit powder supplied adequate amount of nutrient especially protein utilized for body building and consequently result into better growth performance of growing rabbits. On the contrary, recent researcher, Alaba *et al.* (2021) reported non-significance effects on the growth parameters of rabbit bucks fed cottonseed meal diet supplemented with tryptophan. *K. africana* fruit is rich in source of vitamins and phytochemicals like flavonoids (antioxidant) thereby inhibiting oxidative stress which make it capable of improving growth performance of animals (Aliyu and Adeyina, 2022).

Haematological parameters of rabbits fed cottonseed meal diet supplemented with *K. africana* fruits

Blood components are significant indicators of an organism's physiological, nutritional and health conditions which are used to investigate the existence of myriad metabolites in the body. In the present study, it was found that, dietary inclusion of CSM-diet supplemented with *K. africana* fruit aqueous extract (T4) increased the PCV of growing rabbits compared to CSM-diet supplemented with *K. africana* fruit powder (T3) or CSM diet without *K. africana* fruit (T2). However, values recorded for all the dietary

treatments indicate no detrimental effect on the experimental rabbits as values fall within the standard (30.00 – 50.00%) documented by Onifade and Tewe (1993) and Saka *et al.* (2019). The PCV values indicate adequate nutrition of rabbits which implies that the rabbits were not adversely affected by experimental diets. Earlier workers, Amao *et al.* (2012) also observed higher values of PCV in the bucks fed CSM diet supplemented with vitamin E. Observed values of RBC indicated that experimental rabbits were not compromised by the dietary treatments. The RBC values which ranged from $3.50 \times 10^{12}/l$ - $4.75 \times 10^{12}/l$ fell within the reference value for healthy rabbits as reported by Fuglie, (1999) and Saka *et al.* (2019). Red blood cells are produced in the bone marrow and depend on the amount of iron absorbed from the digested feed. The present study suggested that gossypol in CSM depressed PCV and RBC while *K. africana* fruit extract better improved the PCV and RBC compared to *K. africana* fruit powder. Flavonoids are most available phytochemicals in *K. africana* fruit. Flavonoids are capable of scavenging or preventing the production of free radicals and reactive oxygen species by transferring free radical electrons thus protecting the biological systems (Aliyu and Adeyina, 2022). Although the values of haemoglobin fell within the reference value of healthy rabbit (10.70-14.50 g/dL), however, increased value recorded in rabbits fed CSM-diet supplemented with *K. africana* fruit extract is an indication that vitamins and minerals are sufficiently produced from the diet which then synthesizes haemoglobin that aids oxygen and carbon dioxide transportation in the blood.

Macrocytic anaemia involves abnormal nuclear maturation of haemoglobin production which proceeds normally while division lags (Rose, 1971). Inability of *Kigelia africana* to ameliorate the effect of gossypol here is evident as the MCV and MCH significantly increased in the groups of rabbits fed the extracts and powder; perhaps there is need for higher levels of *K. africana* supplementation either in powder or extract in order to ameliorate the effects elicited by gossypol in CSM. Mean Corpuscular Haemoglobin Concentration (MCHC) indicate the amount of haemoglobin per unit volume

which falls within the normal range for healthy rabbit buck.

The White Blood Cells (WBC) count observed in this study showed a detrimental effect of the dietary treatments except for the rabbits fed CSM *K. africana* fruit extract (T4) and blend mixtures (T5). The values range from $2.55-6.05 \times 10^3/\text{l}$ whereby the lower value contradicted the normal value for healthy rabbits ($6.40-12.90 \times 10^3/\text{mm}^3$). The observed lower WBC values may be possible effects of *K. africana* fruit action in CSM-diet by suppressing effects of gossypol. A lower WBC value is an indicator of allergic condition, anaphylactic shock and certain parasitism or presence of foreign body in the rabbit circulatory system (Ahamefuele *et al.*, 2008). However, an elevated value observed in rabbits fed CSM-diet supplemented with *K. africana* fruit extract could be existence of a recent bacterial infections (Ahamefuele *et al.*, 2008). This result is in consonance with the report of Amao *et al.* (2012) who also observed reduced WBC in the CSM-based diet supplemented with vitamin E. Significantly lower values of leukocytes count observed in rabbit bucks fed CSM-based diet suggest that feeding CSC could lower immune system. The reduction did not indicate that the animals were suffering from leucopenia. The antimicrobial mechanisms of macrophage against infection are mediated largely by antioxidant constituents of the diet.

A case of neutrophilia is observed in rabbit fed CSM-diet supplemented with both powder and extract of *K. africana* while other treatment groups fall within the reference value for a healthy rabbit. Neutrophilia results into acute infection when it is accompanied by lymphopenia, however, the values of lymphocytes fall within the reported physiological range of 28-50% (Moore *et al.*, 2019). Neutrophils are known to fight infections thus an increased value could be seen in infections, inflammation and/or neoplastic process. Therefore, increased neutrophil values are not because of higher values of WBC or lymphocytes as both parameters were either low or fall within the reference values; but could probably be the effect of *Kigelia africana*, modulating the activities of proinflammatory enzymes and cytokines. *Kigelia africana* have

been identified to possess a selective inhibitory activity on important cytokines (Nabatanzi *et al.*, 2020). The monocytes and basophils values recorded in this study fall below the normal range for healthy animals according to Moore *et al.* (2019); significant variations in monocytes among the treatments were probably due to phagocytic nature of the macrophages (specialized monocular cells). Higher monocytes count observed in rabbit fed T2 must have been due to proliferation of monocyte cells which suggest a response against toxic effect of gossypol. Lower monocyte values observed in rabbits fed T3 and T4 could be associated with the potential of *K. africana* supplementation to inhibit the effect of gossypol on the rabbit bucks.

The value of platelets observed in this study ($197-237 \times 10^3/\mu\text{l}$) is lower than the reference physiological value ($304-656 \times 10^3/\mu\text{l}$) according to Moore *et al.* (2019). Significant higher values were however, observed in rabbit fed CSC-diet treated with *Kigelia Africana*. The increase could possibly be the effect of *Kigelia africana* eliciting anti-inflammatory activity, consequently giving rise to degranulation of platelets to release growth factors for clot formation and wound healing. Platelets have been identified to repair bone fracture and performing vital role in wound healing however, inflammation and oxidative stress are involved in the pathogenesis of osteoporosis (Shariff and Abdollahi, 2010). Platelets are activated at sites of the injury thereby limiting blood loss while intensifying coagulation process (Gruber *et al.*, 2002).

Serum biochemical parameters of rabbits of cottonseed meal diet supplemented with *K. africana* fruits.

The observed AST values of all the treatment groups was higher than the normal value reported for a healthy rabbit (4.10- 16.20 IU/L) according to Mitruka and Rawnsley (1977). Significant increase in the group fed CSM-diet with *K. africana* powder followed by that of extract could probably mean that the animal suffered heart, kidney or liver damage through hepatocytes destruction. The present result did not align with Amao *et al.* (2012) who observed an increase in AST and ALT level when CSM diet was fed to rabbit but a decrease level when

supplemented with vitamin E. However, the values of AST and ALT recorded by the same researcher were higher than that of this present study. Earlier workers also observed significant reduction in AST and ALT of rats given oral administration of methanolic extract of *K. africana* leaf and fruit (Anaduaka and Uhuo, 2014, Oyelade *et al.* 2021). Elevation level of ALT is usually attributed to hepatocytes injury. Hence, it could be suggested that the animal did not experience a degenerative change in their muscles and livers. Significance increased in ALP level implicated toxicity of gossypol present in cotton seed cake. The present result corroborates with that of Akingbemi and Aire (1994) who also observed significantly increased ALP in rat treated with gossypol and Oyelade *et al.* (2021) who administered methanolic extract of leaf to wister rats. Serum protein and albumin synthesis are associated with available dietary protein (Iyayi and Tewe, 1998). Increased serum total protein in the rabbits fed SBM-based diet; CSM diet and CSM-diet with *K. africana* extract is a corresponding response of the gastrointestinal tract of the animal to better utilization of protein. This therefore indicated that the diet was of relatively good quality and efficient protein metabolism and utilization. However, significantly lower level of albumin concentration could be insinuating an alteration in the normal systemic protein utilization (Jiwuba *et al.*, 2016). Significant elevated value of globulin in rabbit CSM-based diet and CSM-diet with *K. africana* extract is could probably mean adequate utilization of dietary protein indicating high immunity and good resistance to disease. However, the globulin contents of other treatment groups also fall within the reference standard (1.86-3.0g/dL) according to Saka *et al.* (2019).

Increased creatinine content of the rabbit fed CSM diet insinuates that the animal suffered from muscle wastage or disorder. Gossypol has been reported to cause oedema, hypertrophy, and dilation of heart and cardiac muscle degeneration in many species (Abou-Donia, 1989). High creatinine concentration is a corresponding reaction of the presence of some bioactive compounds which have been reported to block the energy metabolic pathway in

animals thus making it difficult for the animal to meet their energy requirement (McClure *et al.*, 1985) The report of Amao *et al.* (2012) and Oyelade *et al.* (2021) is in alignment with the present study where significant reduction in serum creatinine were observed when experimental animals were offered CSC-diet with vitamin E supplementation and *K. africana* leaf extract respectively. A constituent of *K. africana* known as verminoside was found to an active antioxidant component which could possibly maintain cardiac membrane integrity thereby hindering the leakage of serum creatinine (Neelam *et al.*, 2006). The urea values observed in this study (39.42-51.70mg/dL) is higher than the reported normal standard (31.37-38.00mg/dL) for rabbit according to Jiwuba *et al.* (2016). However, significantly higher value was recorded for rabbit fed CSC-based diet. This is an indication that the protein content of the diet is of low quality (Esonu *et al.*, 2001). According to Davis and Berndt (1994), increased serum urea suggests and increase in anaerobic muscle metabolic activities and an implication that there is increased rate of deamination in the liver. The significantly higher serum cholesterol content in rabbit fed CSM-based diet and CSM-diet with *K. africana* fruit extract suggest that the extract could not ameliorate the role of lipoprotein synthesis and metabolism compared to powdery form. It has been reported that aqueous extract of *K. africana* fruit decreased plasma total cholesterol compared to hyperlipidemic control animals (Gupter *et al.*, 2011).

6. Conclusion

Feeding CSM diet supplemented with KAF to rabbit bucks improved the utilization of cottonseed meal as feed protein sources and could be substituted for soybean meal without compromising the nutritional, performance and health status. Therefore, farmers intended raising rabbits for meat purposes must adequately supplement their feed with KAF powder at dose of 100g/100kg without any deleterious effect.

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IMPACT OF AI ON BANK PERFORMANCE: A CASE STUDY ON ACCESS BANK IN NIGERIA

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Abstract

In recent years, the adoption of artificial intelligence (AI) has become one of the most revolutionary breakthroughs in technology. This has impacted Nigeria banking business in a variety of ways. AI has been used in various areas of the banking business, ranging from automating daily chores to more complicated jobs such as fraud detection and predicting market trends and consumer behaviors. However, as AI grows in popularity, it is critical to understand how it affects operational efficiency, security, and customer service. This research aims to examine the extent of the impact of AI on the operational efficiency, security, and customer service of access bank in Nigeria. The study used a theme method to conduct a comparative analysis of scientific literature. The findings reveal, first and foremost, the impact of AI on Access Bank's operational efficiency, which includes increased transaction speed, better customer service, and reduced fraud. Second, the results show how AI improves the customer experience in access banks by personalizing banking services, improving customer support with AI-powered solutions, improving security and fraud detection, and advancing digital banking and accessibility. Finally, the findings show that AI adoption improves access banks' performance by increasing operational efficiency and lowering costs, increasing profitability and employee productivity, improving role transformation, and incorporating artificial intelligence into risk management practices. In conclusion the paper indicate that AI has been important in driving the performance and growth of banking sector in Nigeria with access bank serving as case study. Access bank should continue to invest in artificial intelligence-based technologies such as virtual assistants, automated support systems, and Chabot to enable rapid problem solutions and personalization.

Keywords: Artificial Intelligence, Banking sector, Performance, Access Bank, Nigeria.

1. Introduction

Artificial intelligence (AI) has transformed technology in a variety of ways, including the banking industry (Mujtaba & Yuille, 2024). AI is used in a variety of applications in the banking industry, ranging from automating daily tasks to more complex tasks such as fraud detection and predicting market trends and consumer behaviour. According to studies, global AI in the FinTech market is expanding at an unprecedented rate, with a significant transformative impact on financial services around the world. According to Data Bridge Market Research, the market is expected to reach USD 61.3 billion by 2029, with a

compound annual growth rate (CAGR) of 26.5% over the forecast period [Vanaparthi & Scholar II, 2025]. Much research and analysis have been conducted on how AI innovations can help banks improve their financial performance as they transition to digital transformation (Shiyyab et al., 2022). According to Oyeniyi et al. (2024), incorporating AI into the banking system is part of a deliberate effort to improve operational efficiency, customer satisfaction, and the advancement of financial innovation. According to Awodu (2023), leading banks in Nigeria, such as Access Bank PLC, are implementing AI to improve operational efficiency, security, and customer service.

However, as AI grows in popularity, it is increasingly important to understand how it affects operational efficiency, security, and customer service, as well as the challenges that the banking sector may face when implementing AI.

Statement of problem

While AI has transformed many industries, including banking, its adoption has had both advantages and disadvantages. For Access Bank, technology adoption has influenced the way businesses are conducted, to the point where organisations are attesting to the usefulness and importance of AI in their operations and task execution (Awodu, 2023). However, more research is needed into the impact of AI on customer experience, business outcomes in the banking sector, and efficient operations, particularly in developing economies such as Nigeria. Thus, the main issue is a lack of comprehensive research on the impact of AI on Nigeria Access Bank. This gap has prevented the bank from gaining a thorough understanding of the risks, benefits, and challenges associated with the adoption of AI, which is critical for making key decisions and assisting other banks in implementing AI into their operations. As a result, there is a need to fill a gap by thoroughly investigating the impact of artificial intelligence on customer experience, business outcomes in banking sectors, and efficient operation. This paper investigates the impact of AI technologies on the operational efficiency, security, and customer service of Access Bank in Nigeria.

Objectives of the study

1. To access the impact of AI on the operational efficiency of Access bank.
2. To examine the impact of AI in improving the experience of customer in access bank.
3. To evaluate the effect of adopting AI on the performance of Access bank.

Research Questions

1. How has AI impacted operational efficiency in Access bank?

2. What impact has AI had on the satisfaction of customer and the delivery of services in access bank?
3. In what way does the adoption of AI influence the performance of access bank?

Structure of the paper

The structure of the paper is captured in six sections, with each section addressing a different segment of the study. The paper begins with an introduction to the study, which serves as the foundation for the rest of the paper by describing the problem statement, objectives, research questions, and so on. This is followed by a literature review that includes the impact of AI on operational efficiency, the impact of AI on improving customer experience at Access Bank, and the effect of adopting AI on Access Bank's performance. The study's methodology was then explored. The fourth section of the paper delves into the analysis of the findings, while section five focusses on the discussion of the findings. The final section summarises the study's findings.

2. Literature review

Artificial Intelligence is simply technology that empower computers and machines to replicate human learning, autonomy, creativity, thinking, decision making, and problem solving (Shabbir & Anwer, 2018). It includes area like machine learning, robotics, and natural learning process, all which contribute to AI application in different industries, and also banking sector. In banking system, implementation of AI involves application of algorithm that allow machine to perform task that require human intelligent (Sarker, 2022). For example, AI machine can be educating to note some patterns in data, help in decision-making, make predictions, and automatic repetition tasks (Pedro et al., 2019).

The concept of operational efficiencies simply refers to ability of bank to operate in such a way there will be minimal loss of resources, cost reduction, and maximizing profitability (Rahman, 2023). Artificial intelligence enhances efficiency of operation by optimizing process of decision making, automating day to day task, and improving the whole productivity sectors

(Javaid et al. 2022). RPA and machine learning that are AI technologies give bank an opportunity to streamline their processes like transaction monitoring, reporting, and data entry, minimize intervention of human and error (Venigandla & Vemuri, 2022). This will definitely lead to a very fast, efficient in operation and reduced cost.

Impact of AI on efficient of bank operation

The effect of the astonishingly increasing intelligent behaviour of machines on the developing rate and changing behaviour of businesses all over the world was investigated in a study that was conducted by Soni and colleagues (2018) that was published in 2018. According to the findings of the study, some of the advantages of automation, cognitive technology, and data analysis utilising AI algorithms include a rise in productivity, cost and time efficiency, a reduction in human error, faster company choices, customer preference, forecasts, and the maximisation of sales. Artificial intelligence has helped the banking sector's operational efficiency rise by simplifying manual labour and lowering the need for human involvement. For example, Purificato et al. (2023) claim that artificial intelligence is used to automatically approve loans, so removing and lowering the processing time needed, so improving the quality of decision-making. The use of artificial intelligence (AI) helps in the efficient allocation of resources, which enables human resources to be dedicated to tasks that are more strategic, leaving routine work to be performed by automatic machines.

Additionally, conversational AI improves the efficiency of financial transactions. More specifically, conversational AI improves customer service by giving faster and more accurate answers to questions from customers. It also reduces money on operational costs by automating boring tasks and makes work flow more smoothly (Gumbo et al., 2023).

Impact of AI in improving the experience of customer in access bank

Strong cyber safety measures have been shown to improve financial performance; nevertheless, the application of artificial intelligence in

customer service has been shown to improve non-financial aspects of banks; the study underlined the significant part artificial intelligence tools play inside financial institutions if we are to raise general performance. Moreover, it has made clear how urgently bank consumers should use these artificial intelligence solutions to improve their degree of interaction and service quality. This result supports the conclusions of Elegunde [caps?] and Olajide (2020), who maintained that artificial intelligence can significantly contribute to non-financial business measures, including customer satisfaction, service quality, competitive advantage, and employee efficiency. All of these measures have been discovered and demonstrated to be aided by AI. However, Yeshodeep Khati and Emil Åberg (2018), in their research study titled "Perceptions of Customers Regarding Interactive Voice Response (IVR) Services in the Banking Industry," posited that customers are willing to learn and adjust to IVR (International Voice Recognition) telephone customer service, provided that it is sufficiently advanced to offer adequate customer service. They also indicate that customers who are currently using the services are uncertain about the advantages of the system and are unable to make a decision about whether or not to continue using it. As a result of this, it was discovered that customers have a negative attitude towards the quality of AI-driven customer service as it is currently provided. Despite this, customers have expressed optimism and believe that it will be improved in the future, and they have acknowledged that there will be a change in technology.

Effect of adopting AI on the performance of Access bank

The adoption of artificial intelligence by Access bank has resulted in improved performance in the banking industry in Nigeria. According to research by Abrokwhah-Larbi and Awuku-Larbi (2024) utilising artificial intelligence in marketing elements like Internet of Things (IoT), Collaborative Decision-Making Platforms (CDMP), virtual and augmented reality (VAR), and personalisation techniques, they assert that artificial intelligence in marketing significantly improves financial outcomes, customer

satisfaction, internal operational efficiency, and developmental progress. This is accomplished by leveraging AI in marketing. The findings of this study are consistent with the findings of Konigstorfer and Thalmann (2020), who reported that artificial intelligence helps to reduce losses in lending, improve payment security, automate compliance tasks, and refine customer targeting, all of which contribute to an overall improvement in performance. Following in the same vein, Ris, Stankovic, and Avramovic (2020) demonstrated that the incorporation of artificial intelligence technologies, including virtual assistants and machine learning algorithms, enhances the profitability and performance of banks while simultaneously decreasing their reliance on human labour. Additionally, these technologies help with fraud prevention and better-informed decision-making. Umamaheswari and Valarmathi (2023) emphasise the importance of virtual assistants driven by artificial intelligence for increasing profitability, improving performance, and decreasing human resource reliance, especially in the banking sector. As a result, this demonstrates the effectiveness of artificial intelligence in the banking industry.

In addition, the implementation of artificial intelligence has enabled the banking and finance industry to achieve a more consistent and expedient engagement of customers with their business by focusing on the prompt resolution of their issues. Computer programs that are based on artificial intelligence make use of machine learning algorithms, which enable the system to comprehend the process of a problem and solve it in accordance with the algorithm's set of instructions (Rostami, 2014).

3. Methodology

The present study uses a Systematic Literature Review (SLR) method which focuses on the secondary data synthesis (Cabrera & Cabrera, 2023). Within the scope of this systematic review, a comprehensive and methodical approach was utilised to investigate the ways in which artificial intelligence (AI) impacts operational efficiency, customer satisfaction, service delivery, and the impact that adopting AI has on the performance of Access bank. One

of our goals is to gather all the existing research, like industry reports and related journal, so that how artificial intelligence (AI) affects efficiency in operations, client satisfaction, delivery of services, and how Access Bank's performance in general will change when AI is used can fully be understood. The review meticulously compiles information from a wide variety of academic databases, including Google Scholar, researchgate and JSTOR, in addition to Access Bank reports on the financial sector.

This approach to gathering information from a wide range of sources ensures that both academic literature that has been subjected to peer review and practical instances from the banking industry are included in the compilation of the information. The search strategy makes use of a combination of conducting keyword searches and manually screening the results. A large number of different keyword combinations are utilised in order to locate all of the literature that is pertinent. These include "artificial intelligence," "banking," "operational efficiencies," "satisfaction of customers," "delivery of services," and "effect of adopting AI on the performance of access bank." This repeated search method makes it easier to find both well-known studies and new ones in the same field. By means of a set of pre-defined criteria, one decides which studies to include in the review. Studies on the use of artificial intelligence in the banking industry ought to take front stage. The study just looks at English-language studies released during the past ten years after Access Bank started using artificial intelligence. This ensures current and relevant nature of the studies. Among the forbidden items are articles unreviewed by other professionals, studies unrelated to banking, and studies lacking specific mention of risk management in particular. First looked at for title and abstract every study the search strategy turned up. Then one reads the whole book to see whether it meets inclusion criteria. This methodological structure guarantees the objective, exhaustive, and rigorous nature of the systematic review.

Data Analysis

The data will be analysed using thematic analysis to help us identify major responses to the research questions. It will help synthesise the findings and reach conclusions. Thematic analysis is a qualitative method for thoroughly analysing and interpreting extracted topics (Castleberry and Nolen, 2018).

The current study employs a systematic literature review (SLR) approach that focuses on secondary data synthesis (Cabrera & Cabrera, 2023). The data comes from books, journal articles, industry reports, and so on. The approach ensures a thorough examination of existing models and theories related to the impact of AI on bank performance in Access Bank Nigeria. The literature will be thematically

analysed to detect patterns and draw conclusions about the impact of AI on bank performance in Nigeria. The data will be analysed using thematic analysis to help us identify major responses to the research questions. It will help synthesise the findings and reach conclusions.

4. Result

Several key findings have been uncovered regarding the influence of AI on the performance of Access Bank when analysing the bank's annual report and other scholarly literature. The outcome is categorised into significant themes derived from the bank's report and essential information contained within it.

RQ1: How has AI impacted operational efficiency in Access bank?

Summaries of finding on the impact of AI on operational efficiency of Access bank

Table 1: Findings on the impact of AI on the operational efficiency of access bank using secondary data from the access bank annual report.

Findings	Details	Source
Improvement in the speed of transactions	Report indicate improvement in the speed of transaction and this is attribute to the introduction of AI- base system to the management of transaction and detection of fraud.	Access Bank Annual Report, 2023; ELEGUNDE & OLADIMEJI, 2020
Enhancement of Customer Service	The report indicates that customer satisfaction has risen due to increased engagement facilitated by AI-powered chatbots.	Access Bank Annual Report, 2021; Shad, & Potter, 2024
Lowering fraudulent transactions	Artificial intelligence tools for fraud detection and risk management have diminished the incidence of forged transactions and mitigated financial losses, thereby enhancing the security of banks. .	Access Bank Annual Report, 2020; Rane, 2023
Reduction in cost of operation	In the annual report for the year 2023, it is stated that the implementation of AI has resulted in a reduction in operational costs. Access Bank has observed a substantial decrease in the costs associated with administrative tasks as a result of the utilisation of tools that are powered by artificial intelligence, such as chatbots and robotic process automation (RPA).	Access Bank Annual Report, 2019; Gumbo et al., 2023

The table 1 above show summaries of finding on the impact of AI on operational efficiency of Access bank. According to the finding from annual report of Access bank in Nigeria and other journal adoption of AI has cause Improvement in the speed of transactions (Access Bank Annual Report, 2023; ELEGUNDE & OLADIMEJI, 2020), enhancement of customer service (Access Bank Annual Report, 2021;

Shad, & Potter, 2024), Lower fraudulent transactions (Access Bank Annual Report, 2020; Rane, 2023), an Reduction in cost of operation (Access Bank Annual Report, 2019; Gumbo et al., 2023). All of these aspects have demonstrated that the implementation of AI has resulted in a positive contribution to the performance of Access bank in Nigeria.

RQ 2: What impact has AI had on the satisfaction of customer and the delivery of services in access bank?

Base on the secondary finding obtain from the annual report of access bank and other relevant literature, the finding below provides an insight on the impact of AI in improving experience of consumer.

Table 2: Impact of AI in improving the experience of customer in access bank

Finding	Details	Source
Personalization of banking services	AI-driven data analytics allow Access Bank to provide financial products and services that is personalized, improving satisfaction of customer through tailored recommendations.	Access bank annual report, 2021; Patil, 2024
Enhancement of customer support through AI-powered solutions	Customer support is improve by chatbot that is powered by AI and virtual assistance (e.g., AccessBot), providing 24/7 assistance and limiting the time of waiting, thereby improving experience of customer.	Access bank annual report, 2020; Shad, R., & Potter, 2024
Better security and detection of fraud	AI-driven help in the detection of fraud through their fraud detection systems which analyze patterns of transaction in real-time, thereby protecting consumers against fraudulent activities and also help in building trust in digital banking services.	Access bank annual report, 2023; Olowu, 2024
Advanced digital banking and accessibility	Apps and features that is powered by AI such as voice predictive analytics and recognition improve accessibility of customer and easy in managing accounts and conducting transactions.	Access bank annual report, 2024; Bello & Olufemi, 2024

As demonstrated by the data presented in annual reports and journals, Table 2 illustrates how the implementation of artificial intelligence (AI) in the operations of Access Bank has significantly improved the overall customer experience. Artificial intelligence has resulted in an increase in the personalisation of banking services, improved

security and the detection of fraudulent activity, and enhanced customer support. Additionally, AI has enabled the enhancement of customer support through AI-powered solutions, as well as advanced digital banking and accessibility.

RQ3: In what way does the adoption of AI influence the performance of access bank?

The table below summarises finding on the effect of adopting AI on the performance of access bank in Nigeria base on the secondary data such as the annual report and journal article.

Table 3: Effect of adopting AI on the performance of Access bank

Finding	Description	Source (In-text citation)
Operational Efficiency is Improved by Adoption of AI	Adoption of artificial intelligence simplifies processes, so limiting the time spent on manual tasks and raising general operations and customer service general efficiency.	Access bank annual report (2023); Cate, M. (2025)
Cost Reduction	Automation by AI led to great reduction in the cost of operation, mostly in the operations of back-office, saving the bank a large amount of resources.	Publication, Research. (2019) (2021); Access Bank, (2022)
Increase in Profitability	Access Bank's profits went up because they used AI to lower costs and gain and keep more customers.	Awodu (2023); Access bank annual report (2023)
Employee Productivity and Role Transformation	Using AI has made employees more productive by taking over repetitive tasks. This change also meant that some jobs were adjusted to focus on more important, strategic work.	Awodu (2023); Access bank annual report (2023)

Table 3 indicate the effect of adopting AI on the performance of Access bank in Nigeria. Its shows that adoption of AI in Access bank improve operational efficiency (Access Bank Annual Report, 2023; Cate, M., 2025), reduce

cost (publication, research, 2019; AccessBank, 2022), increase in profitability (Awodu, 2023; Access Bank Annual Report, 2023), employee productivity and role transformation (Awodu, 2023; Access Bank Annual Report, 2023).

5. Discussion**RQ1: How has AI impacted operational efficiency in Access bank?****Improvement in the speed of transactions**

According to the findings of this study, there has been an increase in the speed of transactions, which has led to an improvement in the operational efficiency of the access bank. The implementation of an AI-based system for the management of transactions and the detection of fraudulent activity is responsible for this particular outcome. Challoumis (2024) indicates that artificial intelligence not only improves the speed of transactions but also ensures that enforcement savings thrive, thereby fostering a robust local economy. This finding is consistent

with Challoumis's findings, which indicate that AI optimises investment strategies and streamlines banking processes. It is also consistent with the findings of Adewumi et al. (2024), who emphasize that automation makes it possible to process transactions and applications more quickly, thereby reducing the amount of time that customers have to wait and increasing their convenience. Furthermore, the finding is supported by Gumbo et al. (2024), who stated that conversational artificial intelligence has a positive impact on the operational efficiency of banking. To be more specific, conversational artificial intelligence enhances customer service by delivering responses to customer enquiries that are both quicker and more accurate. Additionally, it reduces operational costs by automating routine

tasks and improves workflow efficiency. On the other hand, Siddiqui (2024) highlights acknowledges the risks associated with data privacy, ethical considerations, and the possibility of employment displacement. He also emphasizes the necessity for strong regulatory frameworks that are associated with artificial intelligence. Despite this, the good effects of artificial intelligence are becoming more obvious.

Enhancement of Customer Service

The results of this study indicate that one of the effects of artificial intelligence on the operational efficiency of access bank in Nigeria is an improvement in customer service. It was reported that there is an increase in the engagement of customers through the utilisation of chatbots powered by artificial intelligence (AI) (Access Bank Annual Report, 2021; Shad, & Potter, 2024). This is a positive development in terms of customer satisfaction. One of the key areas where digital transformation is making an impact is in customer service, according to the findings of this study, which are consistent with the findings of Agu et al. (2024), which indicate that this is one of the key areas. Digital technologies, such as chatbots and mobile applications, are being utilised by financial institutions in order to provide customers with banking experiences that are both convenient and personalised. The ability of customers to access banking services whenever and wherever they want is made possible by these technologies, which results in increased levels of customer satisfaction and loyalty. Furthermore, the finding is consistent with the argument made by Nnaomah et al. (2024), who stated that the growing incorporation of artificial intelligence (AI) technologies within the banking sector is a demonstration of the industry's ongoing evolution and dedication to improving operational efficiency, customer service, and most importantly, risk management practices.

However, Brightwood and James (2024) assert that artificial intelligence-driven finance has resulted in a multitude of advantages, such as enhanced risk management, improved efficiency, and personalised customer experiences. The widespread use of artificial

intelligence in the financial sector, on the other hand, raises significant concerns regarding the privacy of data, the security of data, and ethical considerations. The finding is also contradicted by the findings of Mallah (2021), which indicate that although AI improves the quality of banking transactions to a higher level, such improvements are not sufficient. However, some of the technical banking jobs, such as interacting with customers, could be put in jeopardy by artificial intelligence. He argued that AI cannot replace the role of humans when it comes to the interactions that customers have with employees of banks. In spite of this, there is a guarantee that artificial intelligence will have a positive impact on customer service.

Lower fraudulent transactions

The finding on the impact of AI on the operational efficiency of Access bank Nigeria show that Lower fraudulent transactions. AI tools for identifying fraud and risk management have helped lower the number of fraudulent transactions and reduce financial losses, making banks more secure (Access Bank Annual Report, 2024; Rane, 2023). As a result of the findings regarding the impact of artificial intelligence on the operational efficiency of Access bank Nigeria, fraudulent transactions have been reduced. According to the Access Bank Annual Report (2024) and Rane (2023), artificial intelligence tools for identifying fraud and risk management have contributed to a reduction in the number of fraudulent transactions and a reduction in financial losses, thereby making banks more secure. His result aligns with Majumder (2023), which show that by closely examining transaction data and customer behaviour, AI systems are adept in spotting anomalies that would point to fraud. AI's predictive powers let banks see and stop possible fraud operations. The result is also in line with Johora et al. (2024) research, which claimed that the use of artificial intelligence algorithms for fraud detection is a vital and timely endeavour, promising improved security and trust in the financial ecosystem given the widespread character of banking fraud in our digital society. But the results contradict Bello, et al. (2024), which claimed that the sensitive nature of banking data raises serious issues about data privacy and security when AI is

applied in the sector. As artificial intelligence keeps improving the accuracy, efficiency, and scalability of fraud prevention initiatives, the advantages much exceed these challenges.

Reduction in operational Cost

The findings from the annual access bank report of 2019 show that there has been a reduction in the cost of operation as a result of the implementation of AI. This in line with Fedotova (2024) study which highlighted that digital transformation has the potential to significantly enhance banks' operational efficiency by reducing costs, automating processes, and providing strategic insights through technologies such as artificial intelligence, cloud computing, and data analytics. These findings further demonstrate that access bank has experienced a sizeable decrease in the costs associated with administrative tasks as a result of the utilisation of tools that are powered by artificial intelligence, such as chatbots and robotic process automation (RPA) (Gumbo et al., 2023). This conclusion is consistent with other international results according to Abdelraouf et al. (2025), who claimed that AI disclosure improves firm accounting performance in terms of ROA and ROE and reduces total operational costs. For instance, the result is consistent with some of the observations obtained elsewhere. In addition, the finding is in line with Shiyyab et al. (2023) result which shows that banks' financial performance is affected by the disclosure of artificial intelligence related keywords. This result supports the general consensus that artificial intelligence both raises income and lowers costs. Furthermore, the findings are consistent with Dembo (2024), which demonstrates a significant improvement in administrative operations through the utilisation of AI-driven technology. This technology effectively automates activities such as the input of data and the management of information. All of the evaluated institutions have experienced a thirty percent reduction in their operational expenditures as a direct consequence of the reduction in the number of errors that are caused by individuals. On the other hand, Dembo (2024) argued that the banking industry is aware of the difficulties it faces when utilising AI, including problems with maintaining

confidentiality and a lack of available employees with the necessary skills. The incorporation of artificial intelligence into the banking industry, on the other hand, is regarded as a potentially advantageous opportunity rather than a potentially detrimental risk, with a greater potential for positive impact.

RQ2: What impact has AI had on the satisfaction of customer and the delivery of services in access bank?

The incorporation of artificial intelligence into Access Bank's operations has greatly improved customer experiences by offering personalised services, increasing support, automating routine tasks, enhancing security, and making services more accessible. When these findings are compared to broader trends in the banking sector, it becomes clear that Access Bank has made significant progress, but other financial institutions are also using similar AI technologies to enhance customer service, and the effectiveness of these technologies differs.

Personalization of banking services

By utilising artificial intelligence (AI) to personalise its financial services, Access Bank is demonstrating that it is following the trend that is occurring in banks all over the world. Through the analysis of customer data, Access Bank is able to generate ideas for products that are tailored to meet the requirements of its customers. According to the Access Bank Annual Report for 2021, this results in customers feeling happier and more interested. According to the findings of other studies on the implementation of artificial intelligence, personalisation is one of the most beneficial aspects of the application of AI in the banking industry. According to Lazo and Ebardo (2023), JPMorgan Chase, for example, has implemented data analytics that are powered by artificial intelligence in order to enhance their relationship with their customers. The extent to which banks make use of customer data can have an effect on the level of personalisation that is available to customers. Access Bank's strategy, as demonstrated in its reports, places an emphasis on a more comprehensive perspective on the financial requirements of its customers, which ultimately results in increased customer loyalty, as stated in the annual report of Access Bank (2023).

According to the findings of Manoharan (2024), AI-powered personalisation has the potential to increase customer retention rates in the banking sector by as much as twenty percent, which remains consistent with this trend. The finding, on the other hand, is contradicted by research conducted by Treiblmaier and Pollach (2011), who assert that personalisation services pose a threat to data security and privacy due to the fact that they collect a substantial amount of personal data, including behavioural patterns and transaction histories. Furthermore, Yu and Li (2022) argue that the application of artificial intelligence lacks transparency and accountability. They say this is because the majority of customers and employees are unable to comprehend the decision-making process. This is another reason why the result is not acceptable. The lack of transparency regarding this matter can result in a lack of trust from customers and even among employees. As a result of this, artificial intelligence has a more positive impact on the performance of access bank, as evidenced by a greater number of reports and pieces of literature.

Support of customer through AI

These findings demonstrate that artificial intelligence can improve customer support by utilising AI-powered solutions. A chatbot that is powered by artificial intelligence and virtual assistance (for example, AccessBot) is used to improve customer support. This chatbot offers assistance around the clock and reduces the amount of time customers have to wait, thereby improving the overall customer experience. This discovery is in line with the assertion that was made by Okeke et al. (2024), which states that customer service tools that are powered by artificial intelligence, such as chatbots and virtual assistants, have become essential components of modern customer service strategies. According to what they said, these tools are able to provide answers to a wide range of questions, ranging from straightforward enquiries about accounts to more complex requests for service. Because of this, human agents would be able to concentrate on more complicated problems.

Oyetunji (2024), who talked about how AI and machine learning have made big changes in the

banking industry, also agrees with this conclusion. Because of these changes, operations, customer service, risk management, and profits have all gotten a lot better. At the same time, the banking experience has become more open and personalised. The finding, on the other hand, is contradicted by research conducted by Valavanidis (2023), who suggests that one of the unintended consequences of artificial intelligence is the loss of potential contact with humans. Although artificial intelligence-driven systems such as chatbots and visual assistance may be able to provide instant responses to customers, he argued that these systems are incapable of comprehending human emotions or complex questions. Additionally, the finding contradicts the findings of Castillo et al. (2021), who assert that customers may experience frustration when interacting with an AI system that is not producing the desired results. On the other hand, the influence of artificial intelligence on customer service cannot be overstated; it possesses a multitude of benefits and is supported by a greater body of literature.

Better Security and Detection of Fraud

The results show that access to bank's actual time transaction tracking systems shows that artificial intelligence detects fraud, so strengthening banking security - a significant development for clients (Access Bank Annual Report, 2023). Making transactions online will make consumers safe since fraudulent behaviour is quickly identified and minimised. The findings line up with earlier studies by Khurana (2020), which indicate that artificial intelligence-powered fraud detection systems are rapidly becoming the industry standard. For instance, HSBC has made large investments in artificial intelligence (AI) to fight fraud—more especially, using machine learning models that dynamically change to fit changing fraud trends (Mohanty & Mishra, 2023). Although Access Bank's systems are already quite good in spotting fraud, artificial intelligence could help to detect and stop fraud before it starts, so improving their performance (Hassan et al., 2023). This result, however, contradict Vyas (2023), who claimed that although artificial intelligence can identify many frauds, it is reactive rather than proactive, hence AI can

only identify past fraud techniques but not new one it has not been equipped for. This renders the bank open for attack. Furthermore, Kolber (2018) argued that artificial intelligence is not some time perfect since it occasionally blocks legitimate transactions that could annoy consumers. Still, the results point to more data showing that artificial intelligence improves customer service.

Advanced Digital Banking and Accessibility

Apps and features powered by artificial intelligence, such as voice predictive analytics and recognition, have been shown to increase customer accessibility and the ability to manage accounts and transactions in a straightforward manner. The approach taken by Access Bank has been characterised by a strong emphasis on improving accessibility through the utilisation of mobile applications and services that are powered by artificial intelligence (AI). This is particularly prevalent with regard to the provision of inclusive banking services to individuals who do not have access. This reflects more general patterns in which financial institutions all over the world, such as Standard Chartered and Barclays, are utilising artificial intelligence to remove barriers that prevent individuals from having access to financial services (Abdulsalam, 2024). While the approach taken by Access Bank has been successful in increasing digital accessibility, other financial institutions, such as Revolut and Monzo, are leading the way in providing banking experiences that are entirely mobile-first and completely replace traditional branches. Bolton et al. (2018) claim that this not only shows that Access Bank's efforts are a part of a greater movement but also points out an opportunity for further development in the creation of digital experiences even more natural and seamless.

By customising services, automating tasks, making things safer, and simplifying access, Access Bank's use of artificial intelligence technologies has surely improved the client experience. These outcomes match more general patterns in the banking sector. Access Bank is clearly making rapid development in implementing artificial intelligence, but these technologies can still be developed. Using

predictive analytics, enhancing real-time customer involvement, and smart fraud detection system development will help Access Bank keep ahead of the competition in the evolving digital banking environment.

RQ3: In what way does the adoption of AI influence the performance of access bank?

Operational efficiency and reduction of cost

According to the findings, having access to bank experience improves operational efficiency and reduces costs associated with artificial intelligence adoption. This is consistent with Abildtrup's (2024) findings, which show that artificial intelligence, particularly automation tools such as robotic process automation (PRA) and Chatbots, reduces bank manual labour and operational costs. In the same vein report from Akpanobong & Essien (2022) Indicate that introduction of AI system to Nigeria banking sector save cost, this happened by lowering the need for extensive intervention of human in the back-office functions. Furthermore, shown by Gumbo et al. (2023) is how conversational artificial intelligence improves banking operational efficiency. Conversational artificial intelligence specifically lowers operational costs by automating routine tasks and increases workflow efficiency, speeds and more accurate responses to consumer questions improves customer services. Studies from Ernst et al. (2019) however argued that initial cost of implementation of artificial intelligence may offset some of the advantages, most especially for the smaller bank without any technical infrastructure or financial reserves to adopt AI implementation. Still, adoption of AI will surely help to lower costs based on these studies.

Profitability

The data suggests that using artificial intelligence helped Access Bank turn more profitably. This result aligns with Gautam's 2023 research, which indicates that fast fraud detection and risk management of AI systems enhance security by means of credit score and loan approvals. Particularly artificial intelligence, which allows banks to make quick decisions based on data, this type of creativity

has proven profitable. Access Bank has seen a rise in profits, much as other banks that have applied artificial intelligence technologies (Access Bank Annual Report, 2023; Biswas et al., 2020).

However, not all studies find a link between AI adoption and making money. For example, Stone et al. (2020) said that using AI might help people make better decisions, but that doesn't mean it will always make the business more profitable. Some people said that investing in AI might not pay off right away, especially in a market like Nigeria where changes in regulations and an unstable economy can quickly hurt the banking sector's ability to do its job.

Productivity of employee and transformation role

The results also show that by handling repetitious tasks, the adoption of artificial intelligence has increased employee productivity. This shift also meant that some roles were modified to concentrate on more strategic, vital tasks. Uzowuru et al. (2020) confirm this result by showing that automation of routine tasks lets the staff concentrate on more strategic bank aspect.

Still, there are some issues connected to this transforming process. Some studies by Lingmont & Alexiou (2020) revealed worry of job displacement that might be experienced when implementing artificial intelligence, most especially among low-level employees whose role is directly affected by automation. Although artificial intelligence might boost the output of high-level employees, those working in a routine department have a tendency to lose their jobs. These will cause social and financial questions regarding the acceptance of artificial intelligence among working people.

All things considered, Access Bank benefits from the general AI trend. The results of this study as well as other global data help to mostly justify this good impact of artificial intelligence in Access Bank.

6. Conclusion and recommendations

The objective of the paper is to investigate how artificial intelligence affects the performance of

access banks and their running operations. By means of a comparative analysis of current literature, the research followed a thematic approach to offer clear knowledge on the influence of artificial intelligence on operational efficiency, customer satisfaction, the delivery of services, and the performance of Access Bank. The outcome of the finding shows, firstly, the influence of AI on the operational efficiency of Access Bank: increased transaction speed, better customer service, and less fraud. Secondly, the results highlight how AI improves customer experience in access banks by personalising banking services, enhancing customer support via AI-powered solutions, better security and fraud detection, advanced digital banking, and accessibility. And finally, the results reveal that the adoption of AI affects the performance of access banks by improving operational efficiency and reducing costs, enhancing decision-making, increasing profitability and employee productivity, improving role transformation, and adopting artificial intelligence in risk management. The finding shows the impact of AI on access bank yield positive effects. Nonetheless, Access Bank in Nigeria should keep funding artificial intelligence-based technologies, including virtual assistants, automatic support systems, and chatbots, since they enable quick problem solving and personalising.

Recommendations

The following recommendations are for Access bank in order to improve their operational efficiency:

- Access bank should try to implement AI virtual assistance and Chabot to provide 24 hours support for the customer. This could help resolve enquiries from customer about their lone application, transaction history, account balance, and product inquire.
- They should design machine power by AI that can give suggestion on products and services to customer based on the history of their finance and lifestyle
- Access bank should integrate machine learning algorithm to keep on learning from the history of data and continue to adapt to new fraud pattern. This will automatically

increase security, reduce rate of fraud, and strong trust in customers.

- The bank should implement tools powered by AI like Robotic Process Automation (RPA) tools to automate function of

administrative, will reduce manual errors and fast track execution process.

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A CRITICAL EVALUATION OF INSURGENCY CONUNDRUM IN NORTH-EAST NIGERIA: SAFEGUARDING CHILDREN'S RIGHTS

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Abstract

The activities of insurgents in Northeast Nigeria particularly those of Boko Haram has led to a devastating humanitarian crisis with negative implications for children's rights. This article extensively examines Nigeria's counter-terrorism legal and institutional frameworks, with keen focus on their impact in ensuring the protection of children's rights in conflict-affected regions. Taking into consideration the evaluation of key legislation such as the Terrorism Prevention and Prohibition Act 2022 with other relevant international convention, alongside an analysis of institutional mechanisms such as the National Counter Terrorism Centre and specialized security units, the article shows both the strengths and weakness in Nigeria's strategy for protecting children in conflict-affected areas. This research highlights the effect of insurgency on children's rights, such as disrupted education, physical violence, psychological trauma and social displacement. The findings show that even with the establishment of extensive counterterrorism structures, there is still an essential requirement for protection mechanisms that caters specifically to children within these frameworks. This article recommends strategic solutions such as the establishment of specialised child protection units, strengthening educational infrastructure, implementation of comprehensive rehabilitation programs and legal frameworks reforms to guarantee child protection in conflict situations.

Keywords: Boko Haram, Northeast, Children, Terrorism, Insurgency

1.0 Introduction

National security is a fundamental concern for all sovereign states. Nwagwu and Enwelum, (2024) explains it as the measures put in place by the government to ensure the safety of its citizenry from both internal and external threats. National security is a form of self- preservation, hence, security *inter alia* become the priority of the government. In Nigeria, protection of lives and properties are one of the primary duties of government, and as a matter of fact, the (CFRN, 1999) acknowledges it to be foremost in

national security concerns. This is predicated on the fact that national security is foundational to a peaceful and developed state. However, Nigeria has been grappling with one form of insecurity or another post-1999 transition from military rule. According to (Nwankwo & Odunuga, 2024), these insecurities range from Boko Haram insurgencies to Fulani herdsmen crisis in the country. Despite the avalanche of insecurity crisis in the country, the activities of the Boko Haram seem to have a more profound impact on national security and the human

rights, particularly of children in Nigeria (Nwankwo & Odunuga 2024).

The emergence of Boko Haram in Nigeria in 2002 has had profound and lasting effects on the nation and its citizens, particularly in the North-Eastern region. This group has waged a cultural war, targeting local traditions and historical heritage, which they deem pagan, through violent means such as forced conversions, destruction of cultural artefacts, and attacks on historical sites (Nwankwo & Odunuga 2024). A recent paper (Obidimma & Ilem, 2023) have shown the impact of terrorism and counter-terrorism operations on individual rights, particularly those of children in conflict-affected regions.

Children, as a vulnerable group, bear a disproportionate burden in armed conflicts. They are often deprived of a normal childhood, exposed to human rights violations, and separated from their families, leading to displacement, hunger, and disease (Luka & Ogbu, 2024). The insurgency in the North-East part of Nigeria has had devastating effects on children, including killings, abductions, forced recruitment and displacement. Schools, teachers, and students have been targeted for attack. Making it one of the deadliest conflicts for children globally (Ofuani-Sokolo & Okunrobo, 2023). These challenges underscore the urgent need to address the insurgency in the North-Eastern part of Nigeria in order to safeguard the human rights of children in the region and their implications for developmental and psychological well-being.

This work is divided into seven sections, each addresses a critical aspect of Nigeria's national security, terrorism and violation of children's right in the Northeast. The introduction establishes the importance of national security-Nigeria's struggle with Boko Haram insurgency and its impact on children's rights. The second section makes a conceptual analysis by exploring key concepts like terrorism, Boko Haram and Human Rights. The third and fourth sections explore the legal and institutional frameworks to counter terrorism in Nigeria. The sections discuss laws and institutions such as the Terrorism Prevention Act, Money Laundering Act, Office of the National Security

Adviser (ONSA), National Counter Terrorism Centre *inter alia*. The fifth section details the consequences of terrorism like psychological and physical harms on children. The sixth and seventh sections summarise the findings of this paper and proffer solutions based on the findings of this paper.

2.0 Conceptual Analysis

2.1 Terrorism

The concept of terrorism remains a contentious issue among policymakers and academics, with no universally accepted definition. Scholars like Higgins (2002) argue that terrorism is not recognised as an international crime or as crime against humanity, leading to its treatment within various sub-fields of international law, such as human rights law, humanitarian law, criminal law, and refugee law. Some (Olujobi & Yebisi, 2023) suggest adopting definitions from international instruments like the International Convention for the Suppression of the Financing of Terrorism and UN Resolution 1566. However, Young (as cited in Law Randal, 2024) emphasises the necessity of a clear definition, as its absence has far-reaching implications. Law Randall (2024) notes that the term 'terrorism' carries a negative connotation, often used pejoratively as a moral judgment. Ben Saul (2005) argues that defining terrorism is essential because it undermines fundamental human rights, threatens state sovereignty, and has transnational implications. Schmid (2004) stresses the importance of a comprehensive definition to uphold the principle of dual criminality, which facilitates international cooperation in combating terrorism. Schmid also views terrorism as a form of propaganda aimed at coercive behaviour modification, exemplified by Boko Haram's tactics in Nigeria. Richards (2014) criticises policymakers for failing to define terrorism precisely, allowing state and non-state actors to craft definitions that serve their interests.

However, Crenshaw (2010) argues that terrorists pose a significant threat to international peace and stability, and an agreed-upon definition would help address notorious acts. Notwithstanding the unsettled position on the definition of terrorism, proposed definitions often fail to distinguish terrorism from other

social vices, such as insurgency. Conclusively, the absence of a universal definition of terrorism has hindered its understanding and acceptance.

2.2 Boko Haram

Boko Haram, a terrorist organization, emerged from a local religious movement in Northern Nigeria, influenced by Salafi Jihadist ideologies from the Middle East. The group aligned itself with the teachings of al-salaf al-salih (pious predecessors), asserting (Loimeier, 2012) that its interpretation of Islam was the only authentic one. Boko Haram rebelled against states it deemed infidel, employing coercion to impose its strict Islamic doctrines on civilians. It framed its struggle as a defense of Islam against perceived adversaries, including Israel, European nations, and the United States, citing grievances such as the Iraq War and U.S. foreign policy in the Middle East (Loimeier, 2012).

Following a 2009 uprising, Abubakar Shekau assumed leadership, transforming Boko Haram into a more violent and ideologically driven entity. Under Shekau, the group intensified its attacks on the Nigerian government, neighbouring communities, and Christian civilians in Northern Nigeria. In 2012, a splinter group, Jama'at Ansar al-Muslimin Bilad al-Sudan, emerged but carried out fewer attacks compared to Shekau's faction. Shekau's ideology, rooted in Salafi theology, emphasised exclusivism and hostility toward Western powers, further radicalising the group's actions (Loimeier, 2012).

The socio-economic and political impact of Boko Haram's activities (Loimeier, 2012) has been profound. Insecurity has undermined Nigeria's stability with foreign direct investment dropping from \$8.9 billion in 2011 to \$7 billion in 2012 due to the country's tarnished international image (Loimeier, 2012). The Borno state government and federal authorities have allocated significant resources to counterterrorism, including borrowing \$1 billion to address the insurgency.

Boko Haram's activities have disrupted economic structures, forcing markets to close for extended periods and leading to increased criminal activities such as burglaries and attacks

on banks. Its emergence (Aruofor & Ogbeide, 2022) has been attributed to factors such as corruption, poverty, and socio-economic inequality, which fuelled its initial grievances. However, its evolution into a violent extremist organization has left a legacy of instability, challenging Nigeria's political and economic systems. Addressing these root causes remains critical to achieving lasting peace and security.

2.3 Human Rights

Human rights, often referred to as natural or fundamental rights, are inherent freedoms and privileges essential for a civilised existence (Soldatić & Briskman, 2022). These inalienable rights, including freedom of thought, conscience, religion, expression, assembly, association, and privacy as stated by Soldatić & Briskman, (2022) are universally recognised and protected under international agreements such as those of the United Nations. They safeguard individuals' dignity, liberty, and fundamental interests against state coercion and are integral to democratic governance.

In Nigeria, the government's counter-terrorism measures have been criticised for disregarding human rights and democratic principles, which are both constitutional and international legal obligations (Zango, 2024). Despite allegations of widespread abuses by security forces, including summary executions, torture, and unlawful detentions, few individuals have been held accountable.

The Nigerian military, alongside the Civilian Joint Task Force (C-JTF), has been accused of committing war crimes and potential crimes against humanity in the north-eastern region. Arbitrary killings and detentions of suspected terrorists (Zango, 2024) have violated international human rights provisions, with the government often denying responsibility for the actions of its security agencies. This lack of accountability and respect for human rights undermines the rule of law and exacerbates the challenges of addressing terrorism effectively.

3.0 Legal Framework against Terrorism in Nigeria

3.1 Terrorism (Prevention and Prohibition) Act, 2022

The Terrorism (Prevention and Prohibition) Act, 2022, was designed to repeal and replace its 2011 predecessor. One important thing to consider about this Act is that it significantly overhauled Nigeria's counterterrorism legislative structure towards safeguarding human rights and national security (Kokpan & Osigwe, 2023). This extensive legislation is Nigeria's strongest legal response to terrorism and plays a crucial role in fortifying Nigeria's institutional framework for preventing and fighting terrorism while introducing broader categories of terrorist activities (Kokpan & Osigwe, 2023).

The Act begins by defining terrorism in its *Section 2* to broadly include acts or threats of action that involve serious violence against people, property damage, endangerment of life, or actions intended to pressure governments or international organizations to take certain actions or refrain from taking certain actions. Notably, the Act goes further in the same section to define terrorism in the Nigerian context as an encompassing act committed for ideological, religious, or political reasons. The purpose of the section is to specifically address the questions of motives frequently linked to organizations such as Boko Haram, this expanding the scope of operation of law enforcement agencies in prosecuting a greater variety of terrorist activities especially those that impact the human rights of children in the Northeast.

Further, in order to strengthen efforts to prosecute terrorist operations in Nigeria and bolster the safeguard of human rights, *section 24 of the Act* makes a vital provision that helps prosecute terrorists while protecting persons who give information leading to arrest by establishing strict guidelines for the protection of witnesses in terrorism cases. This provision is indispensable to safeguarding human rights in instances involving witnesses and victims who are minors since it offers safeguards for their safety and identity protection throughout court proceedings (Kokpan & Osigwe, 2023). To complement this effort, the *section 33* stipulates

harsh punishments for terrorist acts, such as prescribing life in prison for other terrorist acts and the death penalty for those that cause death (Kokpan and Osigwe, 2023).

In addition, the Act makes extensive provisions in *Sections 13–18* to address the financing of terrorism since terrorism financing serves as the backbone of a successful terrorist operations. These provisions make it an offense to directly or indirectly provide, gather, or make available of money, property, or other services for pursuing the course of terrorism.

The Act addresses the question of jurisdiction in *section 76* by conferring express jurisdiction on the Federal High Court of Nigeria for such act committed within Nigerian borders and completed outside Nigeria. This section is further complemented with the provision to commence prosecution irrespective of whether the offender or the victim is in Nigeria, or on a ship or aircraft registered in Nigeria, or dealing with or on behalf of the Government of Nigeria, or the person is outside Nigeria.

3.2 Money Laundering (Prevention, and Prohibition) Act, 2022

It is important to reiterate that finance plays an important role in advancing terrorist operations globally (Olujobi & Yebisi, 2024). To address this, Nigeria's legal framework for preventing the funding of terrorism has advanced significantly with the enactment of the Money Laundering (Prevention and Prohibition) Act, 2022 which has clear objectives of preventing, prohibiting, and detecting, prosecuting and punishing money laundering and other related activities in Nigeria. This Act imposes stricter guidelines for preventing, identifying, and prosecuting money laundering crimes, which frequently act as financial conduits for terrorist activities (Chitimira & Animashau, 2023). Therefore, this comprehensive legislation is a testament of Nigeria's dedication to adhering to global anti-money laundering (AML) standards, especially those delineated by the Financial Action Task Force's (FATF) guidelines which are necessary in tackling the finance and growth of terrorism.

Several conduits for funding terrorist operations are prohibited by this Act. First, the Act in its

section 2 criminalises the receiving of cash exceeding five million naira by an individual or ten million naira by a body corporate. Also, *section 3* of the Act mandates the transfer of securities or funds exceeding US \$10,000 to be reported to the Securities and Exchange Commission and Central Bank of Nigeria in writing within a day. Further, when working with high-risk clients or transactions, *section 4* obliges financial institutions and designated non-financial companies and professions (DNFBPs) to follow the due diligence requirements set out in the Act. These provisions are designed to prevent and easily detect the funding of terrorist activities in Nigeria by individuals or body corporate whether or not the transactions are in Nigeria.

Furthermore, the Act establishes a strong reporting mechanism, mandating that DNFBPs and financial institutions submit suspicious transaction reports (STRs) to the Nigerian Financial Intelligence Unit (NFIU) within 24 hours of discovering activities that may be illegal. According to the provision of *section 7* of the Act, a transaction may be tagged suspicious if "it involves a frequency which is unjustifiable or unreasonable; is surrounded by conditions of unusual or unjustified complexity; appears to have no economic justification or lawful objective; is inconsistent with the known transaction pattern of the account or business relationship; or in the opinion of the financial institution or non-financial business and profession, involves the proceeds of a criminal activity, unlawful act, money laundering, or terrorist financing". This requirement for quick reporting improves law enforcement's capacity to quickly identify and shut down terrorist financing networks by facilitating coordinated action against terrorist financing networks, through empowering the NFIU the authority to examine these reports and communicate relevant information to the proper authorities (Money Laundering).

Likewise, in order to promptly arrest emerging and innovative terrorism financing mechanisms, the Act in *section 13* empowers financial institutions and designated non-financial businesses and professions with the authority to evaluate the risk of terrorism financing in emerging new products or business practices

(Money Laundering. Given the volatile character of terrorist financing networks and their influence on regional security, especially with regard to the defense of children's rights in conflict areas, this quality assessment and evaluation component is essential in staying up to date with the emerging means of funding terrorism in Nigeria.

3.3 Armed Forces Act 1993 and Police Act 2020

Together, the Police Act 2020 and the Armed Forces Act 1993 plays a huge role by creating the operational basis for Nigeria's military and law enforcement responses to terrorism in Nigeria (Onyi-Ogelle & Izimah, 2022). *Section 1* of the Armed Forces Act established the Armed Forces of Nigeria which include Navy, Air Force, and Army and saddles them with the responsibility of defending the territorial integrity of Nigeria by land, air, and sea against both internal and external aggressions. This is the basis of the military's authority to carry out counterterrorism operations, especially in the Northeast, where Boko Haram's actions have made military action necessary (Onyi-Ogelle & Izimah, 2022). Therefore, the Armed Forces Act and Section 217 of the Constitution of Federal Republic of Nigeria 1999 (as amended) give the military the legal justification to participate in counterterrorism operations by allowing them to put down insurrection and support civil authorities in upholding public order and protecting human rights. Notwithstanding this, the efficiency of the operations of the Nigerian Army raises serious questions in the light of emergency terrorist groups in North East Nigeria and the multiple civilian casualties that attend the suppression of insurrection (Onyi-Ogelle & Izimah, 2022)

In addition to the armed forces, *section 1* of the Police Act 2020 established the Nigerian police and empowers them to play a role in suppression of terrorist operations in Nigeria. The Act, which updated Nigeria's police structure, provides in *section 4* guidelines for counterterrorism operations by saddling them with the responsibility to prevent and detect crimes, and maintain public safety, law and order which includes terrorism operations. The essence of this provision is to saddle the Nigeria Police Force with a mandate of preventing

terrorism by stopping and identifying terrorist activities, investigate crimes connected to terrorism, and work with other security forces in counterterrorism operations (Adejoh & Lawal, 2022).

It is important to point out that the operational elements of both Acts include protections for human rights, mandating that security forces carry out counterterrorism operations in conformity with the principles of international humanitarian law. Notwithstanding this safeguard, this is sharply contrasted by the realities of human rights violations by law enforcement agencies in the prosecution of suspects (Kolawole & Udombana, 2022).

4.0 Institutional Framework against Terrorism in Nigeria

4.1 Office of the National Security Adviser (ONSA)

As the primary coordinator for all national security issues, including the war on terrorism, the Office of the National Security Adviser (ONSA) is a crucial component in the counterterrorism framework of Nigeria towards suppressing insurgency particularly in the Northern region of Nigeria (Mbaso, 2021). Working directly under the President's direction, ONSA is essential to developing and carrying out all-encompassing counterterrorism plans that support national security goals so as to ensure the creation of a cohesive and well-coordinated strategy for countering terrorist threats throughout the country (Mbaso, 2021). Therefore, the mandate of the office, which includes initiating the cooperation of all security and enforcement organizations, puts the office in the frontline of the battle against terrorism.

In furtherance of its obligations of combatting terrorism, ONSA created the National Counter Terrorism Strategy (NACTEST), which duty is to act as a template for Nigeria's counterterrorism efforts (Basheer & Tunde, 2024). The approach adopted by the policy is diverse, including the integration of preventive measures against terrorism like community involvement projects and championing de-radicalisation programs with military operations (Basheer & Tunde, 2024). Thereby, guarantees the integration of the efforts of many security agencies.

Furthermore, the coordination and analysis of intelligence to prevent, investigate, and track down terrorist acts is a key component of the objectives of ONSA (Basheer & Tunde, 2024). The office facilitates thorough threat assessments and strategic planning by acting as a central repository for intelligence collected from several security agencies (Basheer & Tunde, 2024). Given the complexity of terrorist activity in Nigeria and the frequent intersection of several security issues, this coordinating role is very important in providing support for the security agencies combatting terrorist. These intelligence reports have been successful, particularly in the Northeast, where Boko Haram operates, in locating and dismantling terrorist networks.

Furthermore, the office also plays a vital role in international counter-terrorism cooperation, serving as Nigeria's focal point for engagement with foreign partners and international organizations, fostering international cooperation in counterterrorism operations (Basheer & Tunde, 2024). Through the operations of ONSA, Nigeria has been able to participate in various international counter-terrorism initiatives, facilitating information sharing and capacity building programs as required under the several counterterrorism international and regional frameworks (Basheer & Tunde, 2024). This international engagement has enhanced Nigeria's ability to address transnational terrorist threats and adopt global best practices in counter-terrorism operations.

Mores so, in order to address and effectively arrest the obtaining funds directly or indirectly by terrorist groups, ONSA plays a huge role by supervising the application of Nigeria's counter-terrorism finance system and collaborating closely with regulatory agencies and financial intelligence units (Ichimi, 2023).

4.2 National Counter Terrorism Centre (NCTC)

Arumede & Edwin (2024) recognised the National Counter Terrorism Centre (NCTC) as one of the most important parts of Nigeria's institutional architecture for fighting terrorism. Originally created as a coordinating organization under the Office of the National Security Adviser, the NCTC is the main organization in charge of coordinating and integrating

counterterrorism initiatives throughout Nigeria's several security agencies (Arumede & Edwin, 2024). One of the crucial mandates saddled on the Center includes the creation and execution of all-encompassing counterterrorism policies, with a particular emphasis on the prevention, identification, and reaction to terrorist operations across the nation, with a particular concentration on high-risk areas such as the North Eastern part of Nigeria (Arumede & Edwin, 2024).

It is essential to set out that in order to carry out its duties the NCTC keeps an advanced intelligence-gathering network for the purpose of creating a seamless and easy platform for various security agencies to share information (Arumede & Edwin, 2024). One important benefit of this cooperative strategy is that it has been very helpful in spotting possible terrorist threats and organizing quick reaction plans (Arumede & Edwin, 2024).

The NCTC's operational structure incorporates soft-power strategies in addition to military operations, and it collaborates with regional organizations and foreign partners to implement worldwide counterterrorism strategies (Bala & Tar, 2021). As a result of their inclusive role and attitude to counter terrorism activities, Nigeria is now more equipped to handle the transnational aspect of terrorist activity because to this international collaboration (Bala & Tar, 2021), especially in the Lake Chad Basin region where Boko Haram works beyond national boundaries. However, the rising level of insurgency in the North East makes the effectiveness of the strategies adopted, questionable facts (Yakubu et al, 2022).

4.3 Nigerian Armed Forces

As the main military organization in charge of protecting territorial integrity and battling insurgency, the role of the Nigerian Armed Forces as a relevant institution combatting terrorism in Nigeria is immense. These forces, which include the Army, Navy, and Air Force, have been leading the fight against Boko Haram in the Northeast by protecting civilian populations via both offensive and defensive actions (Ezeani et al, 2021). However, the efficiency of their role has been greatly undermined by the frequent reporting of civilian

casualties resulting from counter terrorism operations of the Nigerian Armed Forces.

The Nigerian Armed Forces (Ezeani et al, 2021) defend civilian populations through both offensive and defensive measures and have been at the forefront of the battle against Boko Haram in the Northeast. In order to achieve coordinated efforts to end terrorism in Nigeria, the Armed Forces have established dedicated units and commands specifically for counterterrorism operations, such as Joint Task Force Operation Hadin Kai, which coordinates military responses to insurgent activity in the Northeast (Ezeani et al, 2021).

However, striking a balance between military goals and human rights considerations—particularly with regard to children's rights in combat zones—has proven to be extremely difficult for the Armed Forces' operations (Chinwuba, 2021). Their operations have been marred with varying degrees of human rights violations including scores of civilian casualties when carrying out air strikes and military exercise (Chinwuba, 2021). Therefore, in order to manage internally displaced people, safeguard civilian populations, and whittle down the recruitment of child soldiers, the military has had to create specific procedures (Chinwuba, 2021). These procedures include steps to identify and safeguard children who are at risk, create safe areas around communities and schools, and enforce stringent guidelines for participation that put the safety of civilians first (Chinwuba, 2021). Therefore, the desire to prevent military operations from unintentionally worsening the humanitarian situation or violating children's rights in areas affected by conflict has inspired the collaboration of the Armed Forces with civilian authorities and humanitarian organizations.

4.4 Nigeria Police Force - Counter Terrorism Unit (CTU)

In order to improve counterterrorism skills domestically and respond quickly to terrorist occurrences, the Nigeria Police Force developed a dedicated unit with the sole responsibility of preventing and combating terrorists' activities known as the Counter Terrorism Unit (CTU) (Mbaso, 2021). CTU is a tactical unit with the tools and training necessary to combat terrorist

threats in urban settings. Working together with other security services to preserve internal security, their responsibility goes beyond simple response to encompass the prevention and investigation of terrorist operations in Nigeria.

CTU's actions are very important in defending civilian populations and vital infrastructure against terrorist attacks (Audu & Zakimayu, 2021). The CTU participates in cooperative operations and investigations and helps to collect and share intelligence with other security services (Audu & Zakimayu, 2021). Therefore, they are a crucial addition to military operations in the larger counterterrorism campaign because of their presence in urban areas and their capacity to react quickly to new threats. However, the recurring decimals of insurgency in the North Eastern Nigeria rendering many persons including children displaced testifies to the lack of desired results in their endeavours (Abakpa & Tyokosu, 2022).

5.0 The Consequences of Human Right Violation of Children in the Northeast

A complex issue that has continued to leave footprints of severe impacts for both personal growth and social stability in the North Eastern Nigeria is the complications of child rights violations that attend terrorism operations and the combat against terrorism (Adegbite, 2021). The brutal consequences of terrorism on child rights in North Eastern Nigeria was greatly manifested in 2014 with the abduction of 276 school girls in Chibok by the Boko Haram terrorist group (Adegbite, 2021). While some of them have gained their freedoms back, many of them remain captives in den of these savage groups, violently infracting all child rights guaranteed under the *Child Rights Act Cap. C. 50 Laws of Federation of Nigeria 2004*. Therefore, due to exposure to violence, displacement, and the loss of family members, the insurgency operations in North East Nigeria has produced a generation of traumatized children who have suffered significant psychological harm, abuse, and permanent physical harms.

The region has seen significant disruptions in education, growth, and development of children, which are basic rights and essential means of growth guaranteed by *section 14-15*

of the Child Rights Act. The deliberate targeting of educational institutions by terrorist groups has resulted in the closure of many schools, leaving a large educational vacuum that may take generations to close and violating the right of the child to growth and development (Abbas et al, 2023). Apart from children who are victims of abductions by terrorists, the destruction of schools and educational institutions by Boko Haram terrorist group leaves a huge debris blocking the path to education of children in this region making them more susceptible to exploitation and recruiting by terrorist organizations (Abbas et al, 2023).

Furthermore, the serious and life-threatening attacks on the region's children's physical safety and health has been unpalatably recurring. The Child Rights Act provides in *section 13* that every child is entitled to enjoy the best attainable state of physical, mental and spiritual health. Despite this safeguard, the rights to health of children in North Eastern Nigeria has been repeatedly violated by terrorist groups through targeted attacks at hospitals and health facilities centres and the abduction of children into forest where their access to basic health facilities are denied (O'Connor et al, 2021).

The Child Rights Act in *section 28, section 11 and 21 respectively* makes provision against exploitative labour, degrading treatments, child marriage and other forms sexual exploitation of children. However, it must be pointed out that there has been significant damage to the social fabric that has historically permitted the safeguard of these rights in the North Eastern Nigeria as a result of insurgency. As a result of this loophole, children have become vulnerable to a variety of forms of exploitation such as forced labour, sexual assault, and recruitment into armed groups (O'Connor et al, 2021). These disorders significantly affect how they develop socially and their capacity to build wholesome relationships in the future (O'Connor et al, 2021). Therefore, these incessant violations necessitate the investigation and proposal of policy geared towards alleviating the lights of children affected by insurgency in the North East of Nigeria.

6.0 Conclusion

The impact of insurgency in Northeast Nigeria has continued to grow steeply leaving footprints of severe child rights violation. These child rights violations do not only result from the operations of terrorist groups but are also consequences of civilian casualties from counter terrorism units. Therefore, an effective safeguard of child rights in the North Eastern region depends on the reformation of educational system, availability of healthcare facilities, rehabilitation of victims of insurgency, establishment of a Child Protection Unit in the National Counter Terrorism Centre, and the reform of counter insurgency laws to demand more accountability from government agencies for civilian casualties caused during counter terrorism operations, and safeguard children's rights during times of conflict.

7.0 Recommendations

The paper makes the following recommendations:

- i. This study recommends the establishment of a dedicated Child Protection Unit as a unit in the National Counter Terrorism Centre saddled with definite responsibilities of protecting children in conflict zones from the violation of their child rights and
- develop strategies to secure these rights through a serene identification and rehabilitation process.
- ii. Prompt attention should be given to the comprehensive revamping of the educational and healthcare access system in the Northeast. This process will focus on the establishment of alternative education programs and creation of emergency health facilities for displaced children.
- iii. Policy makers should initiate a rigorous rehabilitation and reintegration process for children impacted by insurgency in the Northeast, particularly child soldiers and victims of sexual abuse. The initiative should be structured on giving vocational training, family reunion programs, psychological assistance, and medical care.
- iv. Policy makers should embark on legal reforms which should focus on fortifying the safeguards of child rights and ensure accountability of armed forces and other military agencies for reckless conducts resulting in civilian casualties during counter terrorism operations to compensate the victims and their families. This will promote regard to safety procedure when carrying out their military operations.

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FINANCIAL STABILITY AND SUSTAINABILITY: IMPERATIVES FOR COMMERCIAL BANKS' PERFORMANCE IN NIGERIA (2014-2022)

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Abstract

Financial stability and sustainability are indispensable variables, not just for the banking sector, but for the entire economy. For any sustainable development to manifest in an economy, there must be some degree of financial stability and feasibly sustainable medium/long-term financing. This paper is motivated by the need to examine how financial stability and sustainability influence the performance of commercial banks in Nigeria, particularly in the face of economic fluctuations, regulatory challenges, and evolving financial technologies. Thus, it examines the issue of financial stability and sustainability vis-à-vis commercial banking performance in Nigeria. Data sourced from World Bank-Federal Reserve Economic Data (FRED) and commercial banks annual statements of accounts were estimated using unrestricted Vector Auto-Regressive (VAR) model. The estimation shows a good fit of the model, confirmed through the Wald test of joint significance. With further test of the Wald Granger causality, it was discovered that none of the variables Granger-caused each other. We conclude on the ceteris paribus notion that the result confirmed the hypothesis that commercial banks' performance is not influenced by financial stability and sustainability within the study period. The policy implication is its appeal to regulatory bodies to keep fine-tuning policies that sustain an effective system of banking operations in Nigeria. It is therefore recommended that an assessment of distress analysis and failure predictability be conducted in commercial banks on a quarterly basis. More so, in the interest of sustainable development in the Nigerian economy, regulatory bodies should partner with commercial banks to pursue the sustainable finance (Green Finance) agenda.

Keywords: Bank Performance, Corporate Social Responsibility, Stability, Sustainability, Z-Score,

JEL Specification: G21, G28, K100

1. Introduction

Banks are commonly described as the fulcrum on which economies rotate. This is borne out of their intermediation role between the two opposite units of the economy (surplus and deficits). Because of their strategic position and volatile nature of business, banks are most often highly regulated anywhere in the world.

Commercial banks generally seek to have a sustainable stable environment in order to execute their roles of providing financial services, loan facilities and to safeguard economic stability and sustainable growth. Their roles are thus, geared towards effective/efficient performance as key to measuring the well-being of the economy.

Commercial banks in Nigeria have come a long way with challenges that have culminated in failures, mergers, acquisitions, and various reforms. In all, reform that ushered in consolidation aimed at banking stability happened to be the most innovative. This, in the words of Bajomo (2018), *was a reform agenda established by the Central Bank of Nigeria in 2005, that regulated banks equity from N2 billion to a tune of N25 billion. The regulation came with an order for compliance before 31st December 2005, which though caused a lot of argument then, but left an indelible mark in the annals of history of banking in Nigeria.* It is pertinent to note that reforms in banking are not done for their own stability alone, but by extension, economic stability and to ensure banking sustainability vis-a-vis global competitiveness. In this regard, Ojong *et al* (2014) stated that banking reforms in Nigeria were exclusively to: boost quality of banks, enhance financial stability culminating in economic stability, restoring healthy financial sector for inclusiveness and ensuring financial sector effective contribution to the real sector of the economy.

Another reform was introduced in 2012, aimed at building on the gains of consolidation to entrench better performance and to restore confidence. That reform handled a restoration of a delineation between commercial banks and other banks that got eroded in 2005 with the introduction of universal banking. With universal banking, banks were generally referred to as "Deposit Money Banks" which were licensed to practice all kinds of banking and even non-bank activities. Yet, the big bang of 2023 remains the naira redesign, which has left millions of Nigerians in shock and total distrust of the banking system. It was a monetary policy which is strategically used as tools to achieve effective management of currency, bank stability, price stability, and to reinforce investment growth in the economy, Amassoma et al (2018) in Pillah (2023).

In quest for improving the financial stability and sustainability for effective/efficient banking in Nigeria amidst all their crises, there was a new line of thought by CBN in 2012 as to adopt an alternative approach based on sustainable banking. Through the Bankers' committee,

approval for adoption of a policy referred to as "sustainable banking principles" were reached. The principle embedded nine issues of; environment/social risk, environment/social footprint, human rights, women's economic empowerment, inclusive financing, environmental/social governance, capacity building, collaborative partnership and reporting.

It appears that in spite of all the challenges and pressures from economic dynamics stimulating operating environment; increased competitive intensity, the pandemic, currency devaluation, and other macro-economic challenges (Kola-Oyeneyin & Kuroyo, 2021), banking are still resiliently striving in Nigeria. There is more to it then, as banks declare substantial after tax profit yearly. IMF (2013) in banks stability assessment, observed that financial system in Nigeria generally endures; weak governance, non-transparent ownership structures, financial reporting deficiencies, and endemic corruption perceptions. Again, Emifiele (2023) expressed concern over what he described as "Rise in Disruptive Banking Technology". He maintained that such developments have continued to create disruption to traditional system of financial services in banking, relating to it as, "very disturbing." It is on this backdrop, that assessment of banking financial stability and sustainability with respect to their performance is considered in this study. The question therefore, is whether the Nigerian banks have the motivating or inhibiting influence on attaining stable and sustainable future in banking.

1.1 The specific objectives of this study therefore, are to;

- i. Determine the effect of financial stability (soundness) on the performance of commercial banks in Nigeria
- ii. Assess the influence of bank corporate governance on the performance of commercial banks in Nigeria.
- iii. Evaluate the effect of social responsibility in banking on the performance of commercial banks in Nigeria.

1.2 These objectives correspondingly lead to research questions that originate the following hypotheses;

Ho1: Financial stability (soundness) of banking does not significantly influence commercial banks' performance in Nigeria.

Ho2: Bank corporate governance does not significantly influence commercial banks' performance in Nigeria.

Ho3: Social responsibility in banking does not significantly influence commercial banks performance in Nigeria

This paper is in five sections: The beginning chapter dealt with the background, problem statement, specific objectives and hypotheses. Section two examines the relevant literature that includes the conceptual (framework), theoretical and empirical review. Section three covers the methodology, which exrayed the study design, data and methods, and model specification. Section four deals with data analysis and discussion. Finally, in section five, the summary, conclusion and recommendations were looked at.

2. Review of literature

This section is into appraisals of three aspects of the literature. It is comprising of theoretical, conceptual and empirical reviews. While the theoretical part dwells on the underpinning theory that establishes a link between our variables of study, the conceptual encapsulates the variables (dependent and independents) including all the surrogates. The empirical part covers the review of literature by other writers on related or relevant issues of the stability, sustainability and performance.

2.1 Theoretical Review

This study found three theories interestingly associating sustainability with firm's performance and are discussed here under as underpinning theories. These are; the Stakeholder Theory, Corporate Social Responsibility Theory and System Theory.

Stakeholder theory: The assumption of Stakeholder theory holds that business success

can be determined by quality of values in their capacity to be enjoyed by virtually all stakeholders. It is closely related to Corporate Social Responsibility (CSR) as well as sustainability. It therefore suggests that profit alone cannot be adjudged as measure of business success, and that value creation is not just about money (Tom, 2023). This theory is believed to have wider coverage extended to areas like; project management, strategic management, and business ethics. The theory is simply suggesting that the success of businesses is directly proportional to value that is derived by the generality of its stakeholders. Put differently, success of businesses is a function of values at the disposal of different stakeholders.

Theory of Corporate Social Responsibility

based on firm perspectives is according to Friedman (1970) in McWilliams & Siegel (2001), is a framework that have been used to examine Corporate Social Responsibility (CSR) in a firm. Friedman (1970) asserts that engaging in CSR is a symptom of agency problem or put differently as a conflict of interests between the managers and the shareholders. He maintains that manager's interest is usually a means to entrench their own socio-political, and career plans which undermines the shareholders interest. This point of view holds that resources meant for CSR could prudently be spent to enhance efficiency of the firm. This theory emphasizes the need for firm to be socially responsible to their stakeholders. This is referring to being sustainable as being responsible to environment, social and governance issues in the firm for stable and efficient performance

System Theory or System Theory of Management:

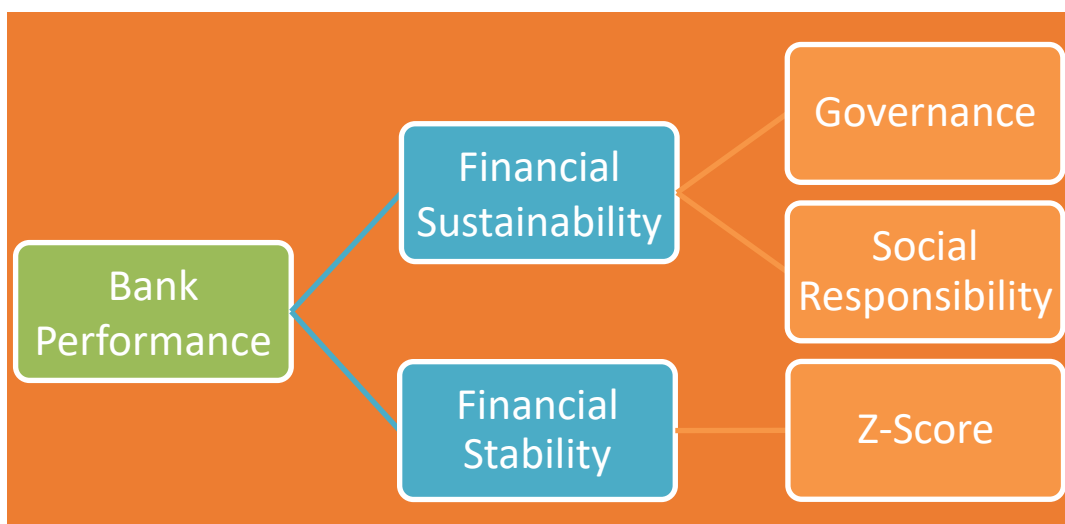
The theory of management is an assertion that organizations are known as a single and unified structure of interconnected units or subsystems. Each unit of the entire system is dependent on the others and cannot function optimally without them. Therefore, if factors are present that adversely affect one subsystem within an organization, it's likely these factors may adversely affect other subsystems, too. This can

result in impacts on the entire system to a certain extent. This framework presents an organization as a natural ecosystem, where each element is interdependent. Theory of sustainability is linked to this theory which according to Barbara in the 70s is an attempt that gives credence to and assimilate of concern for environmental, social and governance mechanism in an organization. Barbara further stressed that an economic model looks at it to sustain natural and financial capital; an ecological model looks at it to biological diversity and ecological integrity; a political model looks at it to social systems that realize human dignity. Religion he said, on its path is on the debate for cultural change looking

at the symbolic, critical, and motivational resources. Thus, all aspects of sustainability such as environment, social and governance are in a way subsystem for optimal functioning of the organizations.

2.2 Conceptual Framework

The conceptual framework explores key factors shaping commercial banks' performance in Nigeria, including financial sustainability, stability, governance, social responsibility, and the Z-score. These elements influence banks' resilience, regulatory compliance, and long-term viability.



Source: Authors Design, 2023

Bank performance: According to the European Central bank (2010) in a report defined bank performance in relation to their ability or capacity to harness sustainable profit. It described profitability as a bank's lifeline towards unforeseen losses. Profitability in the bank is further argued to strengthen banks' capital position which in turn enhances additional profitability through re-investment of retained earnings. It further argued that since profit-seeking organisation are determined to improve owners' welfare, banks then strive to see their return on equity (RoE) greater than the cost of equity to be able to add value to its shareholder. Bikker and Bos (2008), in their

article, viewed bank performance as a complementary effect of competition, concentration, efficiency, productivity and profitability. They described banks as special, for their intermediating services and credit provision in the economy. They therefore conclude that competition and efficiency are essential part of social welfare, as they stimulate low prices, high quality and innovativeness.

Thus, bank performance from all these perspectives is viewed to encompass the traditional – return on Asset and return on equity (ROA, ROE), economic- economic value added and risk adjusted return on capital (EVA, RAROC) and market – total share return, price

per earnings, price per book value (TSR, P/E, P/B & so on). These are all rooted in profitability and efficiency, which can simply be analysed through the acronym CAMELS (Capital Adequacy, Asset Quality, Management Capacity, Earnings quality, Liquidity and Sensitivity). This study thus, uses economic value added as measure of bank performance. It represents the portion of profit that is returned to assets and equity as value addition.

Financial Stability: Bank of Korea (BOK, 2022) refers to financial stability as "a condition in which the financial system is not unstable". It further stressed that financial stability requires financial system in its entirety being stable – focusing on financial institutions, financial markets and financial infrastructure put together. It thus, define stability of financial institutions' as a condition where "individual financial institutions are sound enough to carry out their financial intermediation function adequately, without assistance from external institutions including the government". Schinasi (2004) consider defining financial stability in terms of banks' ability to promote and improve economic processes by engaging risks and its attendant shocks. He, as well considered financial stability as a continuum, which is amenable and persistent with multiple combinations of the constituent elements of finance.

The World Bank Group (2023) claims that there are several definitions of financial stability. The definitions have in common, absence of system-wide scenario whereby the financial system fails in their roles or being able to exhibit flexibility in times of financial stress. A financial system that is stable according to World Bank, has the capability of resource allocation in an efficient manner, handling financial risks, optimizing employment levels, and minimizing relative price movements of real or financial assets. Financial stability therefore, can be seen as maintaining financial soundness, through minimization of volatility or imbalances attributable to financial system activities. It refers to situations where banking or financial activities are effectively and efficiently managed, to mitigate the risk factors. Financial stability in banks is thus, a necessary

mechanism for performance measurement. This study adopts Z-score in the measurement of stability which is in line with the World Bank recommendation of Z-score as a metric that reveals the likelihood of a company in bankruptcy or insolvency. This is also, validated by Raut et al (2017), that measured stability with 7 different ratios embedded in Z-Score analysis.

Financial Sustainability: Waseem & Kota, (2017) perceived sustainability as being able to sustain, or being a state that can be continued for long on same level. He delineates it with conservation, which was recognized as reservation of the ecosystem. The work highlighted 'Sustainable', as a word been remarkable in the 17th century (in www.etymonline.com) denoting 'bearable' or 'defensible', and that by 1965, its current meaning as 'capable of being continued at a certain level' came to be. It was in the 1970–80 that sustainability encompasses environment, economic and social dimensions.

Scholtens, (2006) in Schoenmaker (2019) looked at sustainable banking from a view point of how investing and lending (finance) interrelates with economic, social and environmental problems. In a different view, Fatemi and Fooladi (2013) consider financial sustainability as bringing forth the social and environmental costs of a project. In their argument, they observed that those that adopts such models in their decision-making arrangement are at advantage, with a positive shift in demand for their goods and services.

In recognition of what others are saying, this study thus encapsulates the idea of financial sustainability as creating a paradigm shift in financing obligations of businesses. This is about encouraging innovative financing that considers the long-term value addition of such project to its environment. It begins with identification of such valuable projects, skillfully generating the fund and allocating it in such a cost-effective manner, and ensuring that it guarantees a long-term effect on the general environment. It involves the way a business is effectively managed in terms fairness, accountability and transparency (governance) vis-a-vis its social responsibility to the public as yardstick for measuring it.

Governance: A suggestion by Kjar (2004) in Kastamunska (2016), refers to governance as "the capacity of government to make and implement policy and in other words, to steer society". Kastamunska thus, define governance as "the institutional capacity of public organizations to provide public and other goods demanded by a country's citizens or the representatives thereof in an effective, transparent, impartial, and accountable manner, subject to resource constraints". The concept of governance, in spite all academic conceptualizing, still connotes an organizational ability to manage its affairs and society, and by recognizing the need for collective goals and also identifying all the wherewithal to attainment of such goals (Peters, 2014). He further stressed that a democratic society engage in goal-setting through electoral and legislative process.

Governance could be political, legal, administrative, economic, corporate and/or social. Whichever is the dimension, can be defined as providing leadership in a fair, accountable and transparent manner. It has to do with thoughtful administration of available resources. In this case, it encompasses the capital resource available to an organisation and its prudent management culminating in returns that benefit the entire stake holders.

Social Responsibility: Social responsibility refers to the use of ethical conduct and actions taken by business meant for direct benefit of their operating environment (CFI, 2022). It requires that businesses and individuals in it would have to perform in the best interests of all within their environment and the society at large. In Ramzan et-al (2022) Corporate Social Responsibility (CSR) is viewed as that strategic decision by organizations committing them to compensating the society in order to resolve issues regarding their social and environmental concerns.

In the traditional finance approach, focus is on profit maximization theory of the firm, in which the CSR approach introduces a modern, stakeholder-oriented notion of organizations (Paltrinieri et al., 2020) in (ramza et al 2022). This study therefore considers social responsibility as compensation processes, strategically engrossed in organizational policy

plans and implementation to better their lots and that of their immediate environment and society at large. Thus, a firm's sustainability is seen as a function of their responsiveness to the environment of business in terms of social needs and value addition.

Z-Score: A z-score according to CFI (2023) refers to statistical dimension in predicting the possibilities of a corporate body becoming bankrupt in the nearest future. The z-score is developed by Edward Altman in the 60s, and it indicates numerical values at which a firm is either in distress, grey or in safe zone. The model is designed to involve five financial ratios in order to predict insolvency of a firm. These ratios include; Working Capital to Total Asset (Liquidity Measure), Retained Earnings to Total Asset (Reinvestment of earnings Measure), Earnings Before Interest and Tax to Total Assets (Profitability Measure), Market Value of Equity to Total Liabilities (Leverage Measure), and Total Sales to Total Asset (Turnover Measure). Z-score to this study therefore means an indicator, that uses the logic of CAMEL in determining the soundness or how stable or not a firm may look in the nearest future.

2.3 Empirical Review

This subsection deals with review of some related or relevant empirical studies by other authors in connection with the subject matter of stability, sustainability and performance of a bank or an economy.

2.3.1 Sustainability and Performance

Chang et al (2013) in a study of corporate sustainability, used composite index of corporate sustainability performance. With a Data Envelopment Analysis (DEA) using sixteen industries and their relative efficiency scores, changes were noted with the help of Malmquist index in their three years of successive study. It was found that performance sustainability vary significantly among industries. There was an indication of upward improvement in corporate sustainability performance among the industries. It was concluded that of the 16 industries, 7 were seen to consistently show improvement in their sustainability performance. And that, the natural resources

sector was more consistent and stable in their sustainability performance. Chang et al (2013) in a study of corporate sustainability

In a study by Ejong et al (2014) to examine banking reform and regulatory concern for sustainable banking, secondary data were collected and analyzed with an ordinary least square (OLS) technique. Findings were that, though poor asset quality had a negative influence on bank performance, it was statistically significant. Interest rate on the other hand influence bank performance positively and significant. It was concluded that effective reforms in banking is a panacea to a sustainable banking in Nigeria.

Karim et al (2022) examined sustainability in banking regulations vis-à-vis bank-specific characteristics in era of COVID-19 in Pakistan. Financial stability was used as moderator to sustainable banking regulations. A system-Generalized Method of Moments was used for analysis, and the result indicated that sustainable banking regulations influenced the bank-specific characteristics substantially. It concluded that, looking at year-wise averages of variables, there was on average, a substantial progress made in terms of profitability, market return, capital adequacy, and deposit ratio pre and during pandemic era in Pakistani banks.

2.3.2 Stability and Performance

Kolapo et al (2012) quantitatively investigated credit risk and commercial banks' performance in Nigeria. The study adopted the traditional profit theory and proxied by Return on Asset (ROA), while ratio of Non-performing loan to loan & Advances (NPL/LA), ratio of Total loan & Advances to Total deposit (LA/TD) and the ratio of loan loss provision to classified loans (LLP/CL) as proxy for credit risk. With a Panel model, analysis was conducted and results indicated that the effect of credit risk on bank performance was cross sectionally regular. The study recommended that banks should do more in analyzing their credit risk and the regulatory authorities to enhance enforcement to compliance by banks to relevant laws and guidelines.

Umoru & Osemwegie, (2016) in a study, examined the extent capital adequacy ratio can influence the financial performance of banks in Nigeria. The study applied feasible GLS estimator technique using a pooled panel data in analysis. The study result shows that capital adequacy significantly improved financial performance of the banks in the given period. What the banks are required to do according to the study is to consistently do assessment and reassessment of their capital base to avoid any pit fall.

By empirical examination of regulation, financial development, financial soundness and bank performance, Fapohunda & Eragbhe, (2017) used cash reserve ratio (CRR) and monetary policy rate (MPR) as regulatory indicators, and ratio of broad money supply to Gross Domestic Product (M2/GDP) as financial development indicator; while ratio of non-performing loans to total gross loans as financial soundness indicator and bank performance used earnings of bank after tax as a proxy. Estimation process was the multivariate OLS, co-integration for long-run equilibrium relationship and the associated error correction model. Findings were that: cash reserve ratio, monetary policy rate, financial developments and financial soundness largely impact on bank performance both in the short run and long-run.

In a study to examine what constitutes determinants for banking stability, Ozili (2019) uses aggregate banks performance in analyzing the determinants of banking stability in Nigeria. The study found that efficiency, nonperforming loans, regulatory capital ratios, greater financial depth and banking concentration are major determinants of banking stability in Nigeria. Implications of this study is to ensure bank supervisors strengthen effort and policies designed in addressing the nonperforming loans, capital adequacy problems issues, in order to improve effective workings of the financial system.

Akindutire et al (2021) evaluated banking stability and bank performance in Nigeria, using a longitudinal research design. A Non-linear

Auto-Regressive Distributed Lag model (NARDL) was employed in analyzing the data. Their result indicated that Liquidity Ratio (LIQR), Loan to Deposit Ratio (LDR), Cash Reserve Ratio (CRR) as proxy for bank stability in the short-run had a significant asymmetric influence on performance of banks. But on the long-run, this influence tends to be weaker. It was therefore concluded that the long run effects is an indication that positive and negative shocks to LIQR, LDR and CRR tend have an insignificant influence on bank performance. The study recommended a proper coordination of fiscal and monetary policies for improvement in banks stability indicators.

3. Data and Methods

This study estimates the causal influence of stability and sustainability in relation to commercial banks' performance in Nigeria. Secondary data used were sourced from two different organizations. First is reference to the 6 banks under study, whose yearly financial statements were retrieved from their website and data relating to Economic Value Added, donations, funding and charitable gifts (representing CSR) and Risk Weighted Capital adequacy Ratio. On the other hand, data for stability of banks was proxied by the estimated Z-Scores from the World Bank–Federal Reserve Economic Data (FRED). The choice of Z-score in measuring stability was influenced by the work of Raut et al (2017) and World Bank recommendation.

The data were from six (6) of the eight (8) banks with international operating license, for incomplete data in the remaining 2 and covering a period of 9 years (2014-2022). In the period under review, Nigeria's banking stability faced challenges from economic shocks, currency depreciation, and rising non-performing loans. Regulatory interventions, digital transformation, and improved risk management helped sustain

resilience despite liquidity risks and market volatility.

These data were logged and made quarterly giving 36 observations and were adjusted for seasonality (ensuring its variation with seasons). A unit root test was conducted for stationarity of the data and it was confirmed that all the variables were stationary at order one $I(1)$, which led to Vector Auto Regression (VAR) model for the analysis. Other tests that followed were; lag length criteria and cointegration test. The choice of lag length was made based on Akaike information (AIC), Schwarz information and Hannan-Quinn information criteria at lag order of 1.

3.1 Diagnostic Tests

Various diagnostic tests were conducted in order to align with the assumptions of time series data. The assumptions among others include linearity, normality, multicollinearity, Serial correlation LM test (autocorrelations) and heteroskedasticity. A descriptive statistic was first done to highlight the mean, median, Max. Min. of the data and also, the standard deviation, skewness, kurtosis and jaque-Bera, after which a johansen cointegration test was conducted. The diagnostic tests conducted were the coefficient (multicollinearity), Residual (Serial correlation LM test, Heteroskedasticity) and stability (Recursive estimatez)

3.2 Model Specification

This study observed the data in use as a system, which informed the use of system theory, thus the choice of Vector Autoregressive (VAR) model. The VAR model according to Eric (2021) is used in a multivariate time series analysis, which shows relationships between present observations and past observations of itself alongside other variables' past observations in the system. For example, in VAR model, a dependent variable can be shown as a function of the independent variables, which in turn can be a function of the dependent variable.

Thus, mathematically the functional equation of the model is represented as follow;

$$\text{Bank Performance} = f(\text{Financial Stability, Financial Sustainability})$$

Where,

Bank Performance is represented as Economic Value Added (EVA)

Financial Stability represented as Z-Score and

Financial Sustainability as – Risk Weighted Capital adequacy (Governance), Funding/Donations (CSR)

The model in its econometric notation is given as below;

$$EVA_t = \alpha + EVA_{t-1} + \beta_1 ZSc_{t-1} + \ln \beta_2 RCA_{t-1} + \ln \beta_3 DNG_{t-1} + \mu_t \text{ --- (1)}$$

$$ZSc_t = \alpha + EVA_{t-1} + \beta_1 ZSc_{t-1} + \ln \beta_2 RCA_{t-1} + \ln \beta_3 DNG_{t-1} + \mu_t \text{ --- (2)}$$

$$RCA_t = \alpha + EVA_{t-1} + \beta_1 ZSc_{t-1} + \ln \beta_2 RCA_{t-1} + \ln \beta_3 DNG_{t-1} + \mu_t \text{ --- (3)}$$

$$DNG_t = \alpha + EVA_{t-1} + \beta_1 ZSc_{t-1} + \ln \beta_2 RCA_{t-1} + \ln \beta_3 DNG_{t-1} + \mu_t \text{ --- (4)}$$

Where;

EVA_t = Economic Value added in time *t*

ZSc_t = Z-Score in time *t*

RCA_t = Risk weighted Capital Adequacy

DNG_t = Donation and Gift

α = Constant Value of *Y* at *X*=0

β₁ - β₄ = Coefficients (slopes) of the independent variables

Below is also the econometric notation showing the data being subjected to logarithm transformation.

$$\ln EVA_t = \alpha + \beta_1 \ln EVA_{t-1} + \beta_2 \ln ZSc_{t-1} + \beta_3 \ln RCA_{t-1} + \beta_4 \ln DNG_{t-1} + \mu_t \text{ --- (5)}$$

$$\ln ZSc_t = \alpha + \beta_1 \ln EVA_{t-1} + \beta_2 \ln ZSc_{t-1} + \beta_3 \ln RCA_{t-1} + \beta_4 \ln DNG_{t-1} + \mu_t \text{ --- (6)}$$

$$\ln RCA_t = \alpha + \beta_1 \ln EVA_{t-1} + \beta_2 \ln ZSc_{t-1} + \beta_3 \ln RCA_{t-1} + \beta_4 \ln DNG_{t-1} + \mu_t \text{ --- (7)}$$

$$\ln DNG_t = \alpha + \beta_1 \ln EVA_{t-1} + \beta_2 \ln ZSc_{t-1} + \beta_3 \ln RCA_{t-1} + \beta_4 \ln DNG_{t-1} + \mu_t \text{ --- (8)}$$

3.3 Variable Measurement and A priori Expectation

Variables	Types	Explanation/M Measurement	Source	A priori
EVA	Dependent	This is EBIT that is distributed as Values to assets and all stake holders as put together by various banks	Banks Annual financial statements of account (2014-2022)	>0
Z-Score	Independent	This refer to a model comprising Five financial ratios: liquidity, reinvestment, profitability, leverage and turnover. Designed by Edward Althman	Althman (1968), Raut etal (2017) and World Bank (2018)	>0
RCA	Independent	This involves the estimation of the risk weighted capital adequacy	Bassel II, tier 1 and 2	>0
DNG	Independent	This involves Banks donations and charitable gifts as CSR to various nonpolitical organizations and educational funding etc	Banks Annual financial statements of account (2014-2022)	>0

4. Results and Discussion

The results and discussion section present the key findings of the study, analyzing the impact of financial stability, governance, and social responsibility on the performance of commercial banks in Nigeria. The findings are interpreted in the context of existing literature and economic

conditions, providing insights into the factors influencing banking sector performance between 2014 and 2022. The summary of the analysis done with the of e-views tool are therefore shown in this subsection alongside the discussion.

Table 4.1: Descriptive Statistics

	LDNG	LEVA	LRCA	LZSC
Mean	9.584819	8.996801	1.267977	1.216978
Median	9.524999	9.005282	1.278022	1.210551
Std Dev	0.345204	0.122159	0.021386	0.031677
Skewness	0.873909	0.086058	-0.055712	0,266859
Kurosis	2.566442	1.899349	1.510332	1.647657
Jarcu-Bera	4.864258	1.861584	3.347289	3.170530
Prob	0.087850	0.394241	0.187562	0.204894
Sum	345.0535	323.8848	45.64715	43.81122
Sum Sq. Dev	4.170808	0.522298	0.016008	0.035119

Source: Author's Summary from E-views (2023)

Table 4.1 illustrates the descriptive statistics of the data, worthy of note are; the standard deviation, skewness, Kurtosis, Jarque-Bera and its probability. A standard deviation in average shows the degree of variability of data set from their mean. It tells how far each value lies from the mean, the higher the deviation the farther from the mean and the lower, the closer the mean. All values of our standard deviation far less than one. When data are of values -2 to +2 for skewness and of -7 to +7 for kurtosis, they

are considered to be normal or normally distributed (Hair et al & Bryne 2010). From the result above, the values for skewness are $<+1$ and >-1 , and kurtosis are $<+7$ and >-7 thus indicating normalcy of data in use. Jarque-Bera stated that, value of Jarque-Bera should be positive and distant from zero, to proof the data set is normally distributed. All the Jarque-Bera values in the table values are within positive range and their corresponding probability are greater than 0.05 level of significance.

Table 4.2: Group Unit Root Summary [significant @ I(1)]

Methods	Statistic	Prob**	Cross Sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t^*	-4.76454	0.0000	4	119
Null: Unit root (assumes common unit root process)				
Im, Pessaran, and Shin W-stat	-5.89706	0.0000	4	119
ADF – Fisher Chi-square	50.4998	0.0000	4	119
PP – Fisher Chi-square	87.9277	0.0000	4	136

Source: Author's Summary from E-views (2023)

The unit root test result in table 4.2 shows that all the variables are individually and as a group significant at less than 1% at first order of differentiation I(1). This an indication that the

data were stationary at order 1, which culminates in a system equation known as VAR model.

Table 4.3: Lag Length Order

Lag	Logl	LR	FPE	AIC	SC	HQ
0	192.4173	NA	1.29e-10	-11.41923	-11.23784	-11.35820
1	305.3862	191.7048*	3.65e-13*	-17.29613*	16.38916*	16.99097*
2	309.0362	5.309108	8.09e-13	-16.54765	-1491510	-15.99835
3	318.4208	11.37520	1.37e-12	-16.14671	-13.78858	-15.35327

Source: Author's Summary from E-views (2023)

In table 4.3, the * indicates the lag order that has been selected by standard of the system.

This shows that lag 1 is appropriate for the system equation.

Table 4.4: Summary of the VAR system Equation

Model 1: $LEVA = C(1)*LEVA(-1) + C(2)*LnEVA(-2) + C(3)*LDNG(-1) + C(4)*LDNG(-2) + C(5)*LRCA(-1) + C(6)*LRCA(-2) + C(7)*LZSC(-1) + C(8)*LZSC(-2) + C(9)$

$R^2 = 0.79$ Adjusted $R^2 = 0.72$ Durbin-Watson = 2.10

Model 2: $LDNG = C(10)*LEVA(-1) + C(11)*LEVA(-2) + C(12)*LDNG(-1) + C(13)*LDNG(-2) + C(14)*LRCA(-1) + C(15)*LRCA(-2) + C(16)*LZSC(-1) + C(17)*LZSC(-2) + C(18)$

$R^2 = 0.79$ Adjusted $R^2 = 0.73$ Durbin-Watson = 2.10

Model 3: $LRCA = C(10)*LEVA(-1) + C(11)*LEVA(-2) + C(12)*LDNG(-1) + C(13)*LDNG(-2) + C(14)*LRCA(-1) + C(15)*LRCA(-2) + C(16)*LZSC(-1) + C(17)*LZSC(-2) + C(18)$

$R^2 = 0.74$ Adjusted $R^2 = 0.65$ Durbin-Watson = 2.09

Model 4: $LZSC = C(10)*LEVA(-1) + C(11)*LEVA(-2) + C(12)*LDNG(-1) + C(13)*LDNG(-2) + C(14)*LRCA(-1) + C(15)*LRCA(-2) + C(16)*LZSC(-1) + C(17)*LZSC(-2) + C(18)$

$R^2 = 0.96$ Adjusted $R^2 = 0.95$ Durbin-Watson = 2.23

Source: Author's Summary from E-views (2023)

Table 4.4 depicts the system equation summary, each of the model shows a model fit as their adjusted R^2 are in the range of 65-95(%) and Durbin Watson are in the range 2.09-2.23, indicating absence of serial correlation. The coefficient of determinations is showing that a unit change in the independent variables jointly can influence the dependent in those percentages (72%, 73% 65%, and 95)

respectively. However, the variables probability value in the VAR model estimate were not significant, meaning that financial stability and sustainability may not have had a direct link in the affairs of banking performance in Nigeria. This is a prove of the fact that in spite of the economic crises facing the economy banks still role out huge amount of profits every year.

Table 4.5: Summary of Wald Test (Joint Significance)

Wald Test:

System (%system)

Test Statistics	Value	Df	Probability
Chi-square	1147.229	16	0.0000
Null Hypotheses: $C(1)=C(2)=C(3)=C(4)=C(6)=C(7)=C(8)=C(9)=C(11)=C(12)=C(13)=C(14)=C(16)=C(17)=C(18)=C(19)=0$			

Source: Author's Summary from E-views (2023)

Table 4.5 shows the joint significance of the model using Wald system test. The probability is less than 1% level of significance, therefore

signifying that the variables and their lags jointly are significant to fail to accept their null hypotheses of no significant influence

Table 4.6 VAR Granger Causality

Dependent Variable LEVA			
Excluded	Chi-square	Df	Probability
LDNG	0.684073	2	0.7103
LRCA	1.420769	2	0.4935
LZSC	0.3369	2	0.8450
Dependent Variable LDNG			
Excluded	Chi-square	Df	Probability
LEVA	0.007646	2	0.9962
LRCA	0.234237	2	0.8895
LZSC	2.590970	2	0.2738
Dependent Variable LRCA			
Excluded	Chi-square	Df	Probability
LEVA	0.241455	2	0.8644
LDNG	0.749446	2	0.6875
LZSC	1.782151	2	0.4102
Dependent Variable LZSC			
Excluded	Chi-square	Df	Probability
LEVA	4.203914	2	0.1222
LDNG	0.006670	2	0.9967
LZSC	0.411574	2	0.8140

Source: Author's Summary from E-views (2023)

Table 4.6 highlights the ganger causality test of the variable, showing their probability values greater than the 0.05 significance level. This is meaning that we fail to reject the null hypothesis that says, the variables do not granger cause one another. That is to say the

lags value of each of the independent variables cannot be used in forecasting the present and future values of the dependent variables.

5.0 Conclusion and Recommendations

This paper estimates the link between financial stability, sustainability and commercial bank performance in Nigeria. Though there was limited data to achieve the very objective/assumption of time series data. However, with conversion technique, the 9 year-period observation was made quarterly to have become 36 observations. Data treatment were done, in all to avoid the widely acknowledged fact that, limited data may originate a misleading estimation outcome. The result of our unit root conducted shows that, all the data were stationary at order I(1), which lead to a Vector Autoregressive (VAR) model estimate. The result of cointegration test both at trace statistic and maximum Eigen values show absence of cointegration among the variables and so an unrestricted VAR model was conducted through the conventional OLS estimate.

Outcome of the VAR estimate indicates that the usual cause and effect relationship among the response and explanatory variables is no longer the priority in a multivariate time series. That is the more reason this study falls short of its empirical expectation. It now appears that in a VAR system, all variables are endogenous. However, further estimation using Wald test for joint significance of the variables, it was found that each variable have their lags of (-1) and (-2) showing significance. A further analysis of Wald granger causality test indicated that the variables does not granger cause one another. This in some ways has buttress the facts of our hypotheses, that financial stability and sustainability does not influence commercial

banks performances in Nigeria. Like for instance, in spite the social, political and economic instability in the country, UBA recorded in Q1 of 2023 a significant rise in profit before tax by 38.2% over the Q1 of 2022. Similarly, FCMB reported to have a surge in profit by 61% in Q1 of 2023 and first bank had a profit margin of 38% and so on.

Results from other previous study differ significantly perhaps because of differences in conduct and methodologies. This study holistically viewed stability, sustainability and performance as imperatives-of a system, thus leaving a policy implication for such regulatory bodies as Ministry of Finance, CBN and NDIC to finetune policies that will sustain effective system of banking operation in Nigeria. It is on this backdrop that the following recommendations are made. One, assessment of distress analysis and failure predictability be conducted in the commercial banks on a quarterly basis. This can lead to early identification and in no measure, cushion any shocks of variability that are likely to create a ripple or multiplier effect in the system. In the interest of sustainable development in the Nigerian economy, the regulatory bodies should partner with commercial banks in sustainable finance agenda as a follow up on the adopted sustainable banking principles. It is not enough to adopt a principle, but it has to be followed with a decisive and effective implementation mechanism with uninterrupted monitoring.

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SHAREHOLDERS PARTICIPATION AND CORPORATE PERFORMANCE OF LISTED FIRMS IN NIGERIA

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Abstract

The nexus between stakeholders' engagement and performance of companies has increasingly gained attention in corporate governance research in emerging markets like ours. Shareholders as one of the major stakeholders play a pivotal role in shaping corporate strategy, governance practices, and ultimately firm performance. This study investigates the impact of shareholders' participation on corporate performance of Nigeria's listed firms. Relevance of this study is underscored by the peculiarity of Nigeria's corporate governance challenges. A longitudinal research design was employed, analyzing data from listed firms in Nigeria over a period of 15 years (2009-2023). Quantitative analysis was conducted using regression models and data on Tobin's Q, Earnings Per Share (EAPS), Market Value Added (MVA), board ownership, CEO ownership, and institutional ownership were sourced from annual reports and the Nigeria Exchange Group. The study reveals that shareholders' participation has a mixed impact on performance, with board ownership positively affecting Tobin's Q but negatively influencing EAPS. CEO ownership has a positive but insignificant impact on EAPS and MVA, while institutional ownership exhibits an insignificant effect across all performance metrics. These findings highlight the complex and context-dependent nature of shareholder influence on firm performance in Nigeria. The study recommends that public companies should ensure that shareholders' participation is effectively aligned with their strategic objectives and policies should be designed to optimize ownership structures while mitigating potential conflicts of interest. This study provides a foundation for future research on governance practices, particularly focusing on the role of institutional investors and the moderating role of governance mechanisms in enhancing shareholder value.

Keywords: Shareholders' Participation; Corporate Performance; Board ownership; CEO Ownership; Institutional Ownership; Corporate Governance

1. Introduction

The nexus between shareholders' participation and the corporate performance of listed firms has increasingly gained attention in corporate governance research, especially in emerging markets like Nigeria. Shareholders play a pivotal role in shaping corporate strategy, governance practices, and ultimately firm performance. Recent studies have highlighted that the effects of shareholder participation vary significantly across different ownership structures, such as board ownership, CEO ownership, and institutional ownership, depending on the socio-economic and institutional contexts (Alkurdi et al., 2021; Akanpaadgi & Binpimbu, 2021). In Nigeria, where corporate governance frameworks are still evolving, ownership concentration and weak regulatory enforcement often exacerbate challenges such as conflicts of interest, limited transparency, and inefficiencies in aligning shareholder and corporate objectives (Alayande & Ola-Awo, 2021; Aina, 2018). These unique governance dynamics necessitate a comprehensive examination of how shareholders' participation influences corporate performance in this context.

Despite the extensive body of literature on corporate governance, there remains a critical gap in understanding the role of shareholders' participation in Nigeria's public firms. Previous studies conducted in developed markets have established that shareholders' involvement can enhance firm performance by fostering accountability and aligning managerial interests with shareholder objectives (Ararat & Dallas, 2011; Alfaraih et al., 2012). However, findings from emerging markets suggest more mixed outcomes, often influenced by institutional voids, cultural factors, and governance weaknesses (Agusti-Perez et al., 2020; Bendell & Huvaj, 2020). While board ownership may align directors' interests with those of shareholders, it can also lead to opportunistic behavior if unchecked (Boateng et al., 2022). Similarly, CEO ownership might encourage managerial alignment but risks creating power imbalances that undermine governance (Berebon & Sorbarikor, 2020). Institutional

investors, expected to drive active engagement, often exhibit passive behaviors in Nigeria, limiting their potential governance impact (Al-Hiyari & Kolsi, 2021). These tensions underscore the need for context-specific research to explore how shareholders' participation shapes performance outcomes in Nigeria's unique governance environment.

Opportunities for this study arise from the distinct differences between Nigeria's corporate environment and those of developed markets or other emerging economies. In Nigeria, ownership concentration among board members and CEOs is prevalent, and institutional investors often fail to exert the active governance roles observed in other settings (Aina, 2018; Alfaraih et al., 2012). Additionally, the institutional and regulatory frameworks in Nigeria pose unique challenges, including weak enforcement of governance codes and limited transparency in shareholder dealings (Alayande & Ola-Awo, 2021; Agusti-Perez et al., 2020). Agency theory posits that shareholder ownership aligns managerial interests with those of the owners, thereby mitigating agency costs and fostering performance (Ararat & Dallas, 2011; Jensen & Meckling, 1976). However, the dual impact of board ownership observed in this study—positive on Tobin's Q and negative on EPS—reflects the complexities of these relationships in contexts like Nigeria, where ownership concentration may lead to conflicts of interest (Boateng et al., 2022). Stakeholder theory broadens this perspective by emphasizing the firm's responsibility to balance the interests of various stakeholders, suggesting that shareholder participation must align with long-term value creation goals (Al-Hiyari & Kolsi, 2021; Bendell & Huvaj, 2020).

This study makes several significant contributions to the field of accounting, particular corporate governance and reporting. Contextually, it expands the literature by focusing on Nigeria, an under-researched emerging market with peculiar governance characteristics. This study also employs a robust longitudinal design, enabling a detailed analysis

of trends over time and enhancing the generalizability of its findings. Theoretically, it advances both agency and stakeholder theories by demonstrating their applicability in contexts characterized by weak governance and institutional voids. The study also addresses methodological gaps by integrating multiple performance metrics; Tobin's Q, EPS, and MVA, providing a comprehensive assessment of corporate performance. The paper is structured as follows: the introduction, literature review, methodology, results, discussion, and implications.

2. Literature Review

2.1 Corporate Performance

Corporate performance is a broad and multifaceted concept that is integral to understanding the success and efficiency of a firm. It is often measured in terms of financial outcomes, such as profitability, return on assets (ROA), return on equity (ROE), and market value, but can also encompass non-financial indicators, including innovation, employee satisfaction, and social responsibility (Bendell & Huvaj, 2020). Recent studies have emphasized the importance of integrating both financial and non-financial measures to provide a comprehensive view of corporate performance. According to Agusti-Perez et al. (2020), temporal symmetry plays a critical role in the relationship between slack resources and performance, suggesting that the duration and timing of resources utilized can have a lasting effect on firm performance. This implies that corporate performance should not only be viewed through the lens of current financial indicators but also through long-term value creation, which can be influenced by strategic decisions and stakeholder management. As Agnihotri et al. (2016) argued, the evolving nature of customer satisfaction, particularly in business-to-business settings, highlights the dynamic nature of performance in response to external factors such as market changes and customer expectations. Measurement of corporate performance has traditionally focused

on financial metrics like profitability and market value, but there is a growing recognition that these may not fully capture a firm's overall success. In this regard, Tobin's Q, which compares a firm's market value with its asset replacement cost, has become a popular measure for assessing corporate performance, as it reflects both the tangible and intangible value created by the firm (Bandeira-de-Mello et al., 2011).

2.2 Shareholders' Participation

Shareholders' participation in corporate governance has long been recognized as a key determinant of corporate performance and value. Defined broadly, shareholder participation refers to the involvement of shareholders in the decision-making processes of a company, ranging from voting on key corporate issues to influencing strategic and financial policies (Aguilar, 2013). The literature suggests that the degree of shareholder involvement can vary significantly depending on the type of ownership, the governance structure, and the regulatory environment within which a firm operates. According to Alkurdi et al. (2021), institutional shareholders, often possess the resources and expertise to exert significant influence on corporate decisions, which can ultimately affect firm performance. This participation is typically more pronounced in firms with concentrated ownership, where large shareholders, such as institutional investors, can have a greater say in the company's direction (Alfaraih et al., 2012). One of the most common ways shareholders participate is through voting, where they influence corporate governance practices, mergers and acquisitions, and changes in corporate policy (Akanpaadgi & Binpimbu, 2021). The rights of shareholders to vote on corporate matters are enshrined in most national corporate governance codes, though the level of influence exercised may depend on the type of ownership structure. Bhabra and Eissa (2017) argue that when ownership is more widely dispersed, individual shareholders may lack the influence to affect major decisions. In contrast, concentrated ownership structures,

particularly those dominated by institutional investors, often lead to more active shareholder participation. The power of institutional shareholders lies not only in their voting rights but also in their ability to engage with management on matters of strategic importance, thereby influencing decisions that can affect the long-term success of the firm (Burns et al., 2010).

2.2.1 Board Ownership and Corporate Performance

Board ownership refers to the shareholding held by members of a company's board of directors and is often considered a key corporate governance mechanism. It is theorized to align the interests of directors with those of shareholders, thus encouraging decisions that maximize shareholder wealth. According to Aguilar (2013), board ownership is seen as a commitment signal to both internal and external stakeholders, as directors with significant stakes in the company may be more motivated to enhance corporate performance. Several studies have adopted different methods to measure the influence of board ownership, including the percentage of shares held by directors or the concentration of ownership among a few directors (Alkurdi et al., 2021). The direct relationship between board ownership and corporate performance has been studied across various contexts, with mixed results. Some researchers have linked board ownership with enhanced performance by creating a more effective monitoring role, while others suggest that excessive ownership concentration may lead to conflicts of interest or entrenchment (Akanpaadgi & Binpimbu, 2021).

In theoretical terms, agency theory provides a framework for understanding the connection between board ownership and corporate performance. The theory posits that when board members hold significant shares in the company, their interests are more closely aligned with those of shareholders, reducing agency costs (Jensen & Meckling, 1976). This alignment theoretically promotes better decision-making that prioritizes long-term

company success over personal short-term gains. However, stewardship theory, which emphasizes trust and collaboration between directors and shareholders, suggests that board members, when given ownership stakes, might also be motivated by intrinsic satisfaction and organizational success, rather than purely financial gains (Davis et al., 1997). The relationship, therefore, could be contingent on the nature of ownership and the specific governance practices within firms.

A limited body of literature has explored the relationship between board ownership and corporate performance, particularly in the context of Nigerian listed firms. For example, Alkurdi et al. (2021) found a positive relationship between board ownership and financial performance in Jordanian firms, indicating that higher board ownership led to better resource allocation and decision-making processes. Similarly, in Nigeria, Aribaba et al. (2022) examined the impact of ownership structure on financial performance in the building materials sector, showing that concentrated ownership by board members resulted in improved profitability. However, other studies have yielded contrasting results. For instance, Al-Haddad & Al-Abed (2021) in Yemen found no significant relationship between board ownership and performance in the oil and gas industry, suggesting that the effect might be industry-specific. In another study, Al-Hiyari & Kolsi (2021) found that excessive board ownership in the Middle East negatively affected performance due to entrenchment behaviors. This body of evidence highlights that while there is substantial interest in the role of board ownership in firm performance, the relationship may vary across regions and industries, with ownership concentration not always leading to better performance. Hence, the study states the first hypothesis as:

H1: There is no significant relationship between board ownership and corporate performance among listed firms in Nigeria.

The argument for the first hypothesis stems from the mixed findings in prior literature. While some studies support the idea that increased board ownership aligns directors' interests with those of shareholders, improving corporate performance (Aguilar, 2013; Alkurdi et al., 2021), others suggest that too much concentration of power within the board can lead to entrenchment, which negatively impacts performance (Al-Hiyari & Kolsi, 2021). Given these contrasting views, it is reasonable to test whether this relationship holds in the Nigerian context.

2.2.2 CEO Ownership and Corporate Performance

CEO ownership refers to the equity ownership held by a firm's Chief Executive Officer, often considered an essential element of corporate governance. It is theorized to align the interests of the CEO with those of the shareholders, potentially motivating the CEO to make decisions that enhance firm performance (Alkurdi et al., 2021). The concept has been measured using various proxies, such as the percentage of shares held by the CEO, or the value of the stock owned relative to the total value of shares outstanding (Agusti-Perez et al., 2020). CEO ownership is seen as a mechanism to reduce agency costs by ensuring that the CEO has a financial stake in the company's success (Jensen & Meckling, 1976). However, excessive CEO ownership can also lead to entrenchment effects, where the CEO may prioritize personal interests over the company's performance (Alshubiri, 2021). The implications of CEO ownership for corporate performance have been widely discussed, with varying views on whether it leads to better or worse outcomes depending on the context.

From a theoretical standpoint, agency theory provides a foundation for understanding the connection between CEO ownership and corporate performance. Agency theory posits that when a CEO holds a significant portion of the company's shares, the interests of the CEO and shareholders are aligned, which should reduce agency costs and promote decisions that

increase firm value (Jensen & Meckling, 1976). On the other hand, stewardship theory suggests that CEOs, when empowered by ownership, might act in the best interests of the firm due to their intrinsic motivation to enhance the company's long-term success (Davis et al., 1997). Conversely, the entrenchment hypothesis suggests that CEOs with excessive ownership may become more powerful and less accountable, which could negatively affect performance (Morck et al., 1988). These contrasting theories highlight the nuanced nature of the relationship between CEO ownership and corporate performance, indicating that the effect might be contingent on factors like ownership concentration, firm size, and governance structures.

Several studies have examined the relationship between CEO ownership and corporate performance, though results remain mixed. For instance, in a study on Jordanian listed firms, Alkurdi et al. (2021) found a positive relationship between CEO ownership and financial performance, suggesting that higher CEO ownership incentivizes better management practices. Similarly, Alfaraih *et al.* (2012) reported a positive impact of CEO ownership on firm performance in Kuwait, with CEOs acting as more efficient decision-makers when holding significant shares. On the other hand, in Nigeria, Aribaba *et al.* (2022) found that high levels of CEO ownership could lead to negative performance outcomes, as CEOs with substantial control over the company might make self-interested decisions that detract from shareholder value. In contrast, a study by Al-Haddad and Al-Abed (2021) in Yemen showed no significant effect of CEO ownership on firm performance, arguing that other governance factors, such as institutional ownership, may overshadow the impact of CEO ownership. Similarly, a study by Agusti-Perez et al. (2020) on Spanish firms indicated that CEO ownership had a weak positive effect on performance but only in firms with strong governance frameworks. These varying results suggest that while CEO ownership may have a potential impact on corporate performance, the effect is

likely influenced by factors such as governance practices, ownership concentration, and the broader institutional environment.

H2: CEO ownership has no significant effect on corporate performance among listed firms in Nigeria.

The formulation of this null hypothesis stems from the mixed findings in the literature regarding the relationship between CEO ownership and corporate performance. While some studies find a positive impact (Alkurdi *et al.*, 2021; Alfaraih *et al.*, 2012), others suggest that excessive CEO ownership can lead to entrenchment and negatively affect firm performance (Aribaba *et al.*, 2022). Given these divergent views, it is important to test the hypothesis in the context of Nigerian listed firms.

2.2.3 Institutional Ownership and Corporate Performance

Institutional ownership refers to the shareholding in a company by large organizations such as pension funds, insurance companies, investment firms, and other entities that manage substantial assets (Agnihotri *et al.*, 2016). The influence of institutional investors is frequently examined in terms of their ability to monitor and influence corporate decisions, which could, in turn, affect company performance (Alkurdi *et al.*, 2021). Institutional ownership has been measured through the proportion of total shares held by institutional investors (Al-Haddad & Al-Abed, 2021) or by categorizing institutional investors based on the type of institutions (public vs. private, active vs. passive investors) (Alfaraih *et al.*, 2012). Implications of institutional ownership on corporate performance have been explored within the context of corporate governance, with institutional investors typically seen as catalysts for better governance practices due to their access to resources and expertise (Bendell & Huvaj, 2020). Furthermore, institutional ownership is often linked to long-term performance because institutional investors are less likely to engage in short-term profit

maximization strategies compared to individual shareholders (Aribaba *et al.*, 2022).

From a theoretical perspective, institutional ownership aligns with agency theory, which posits that institutional investors act as monitors to reduce agency costs, aligning the interests of managers and shareholders (Jensen & Meckling, 1976). By holding substantial stakes, institutional investors are incentivized to oversee managerial decisions, ensuring that firms adopt strategies that enhance value and improve performance (Al-Hiyari & Kolsi, 2021). This relationship suggests that higher institutional ownership may lead to improved performance outcomes through better governance and monitoring. Moreover, resource dependency theory also helps explain this relationship, suggesting that firms with significant institutional ownership may gain valuable resources, such as strategic guidance, financial backing, and networking opportunities, which can positively affect performance (Bandeira-de-Mello *et al.*, 2011). Several studies have examined the connection between institutional ownership and corporate performance, especially within the context of emerging markets like Nigeria. A few studies, such as those by Alkurdi *et al.* (2021) in Jordan, find that institutional ownership positively influences corporate performance due to enhanced governance mechanisms and the ability to implement long-term strategies. Similarly, Alfaraih *et al.* (2012) report a positive relationship between institutional ownership and financial performance in Kuwait, where institutional investors provide firms with better managerial oversight and resources.

However, there is evidence of mixed findings as well. In a study by Aribaba *et al.* (2022) on Nigerian listed firms, the authors found that while institutional ownership improved governance, its effect on financial performance was not consistent across all industries. Some studies, like those of Al-Haddad & Al-Abed (2021) in Yemen, suggest that the influence of institutional investors may be weaker in firms with more concentrated ownership or where governance structures are already strong.

Conversely, Akhtaruddin & Rouf (2012) found that in Bangladesh, institutional ownership did not significantly impact performance, possibly due to weaker enforcement of corporate governance regulations. The relationship between institutional ownership and corporate performance remains a topic of substantial debate. On the one hand, several scholars argue that institutional investors improve firm performance through better monitoring and governance (Bendell & Huvaj, 2020; Alkurdi *et al.*, 2021). On the other hand, some studies, particularly in developing markets like Nigeria, suggest that the impact may vary depending on the context and the specific characteristics of the firm (Aribaba *et al.*, 2022). Therefore, the study hypothesizes that:

H3: Institutional ownership has no significant effect on corporate performance in Nigerian listed firms.

This hypothesis is grounded in the conflicting findings regarding the impact of institutional ownership. While strong governance and resource access may suggest a positive effect, the varying effectiveness of institutional ownership in different contexts, especially in emerging markets like Nigeria, leads to the null hypothesis that institutional ownership may not have a significant effect on corporate performance.

3. Methods and Data

This study employs *ex-post facto* and longitudinal research designs. The *ex-post facto* research design becomes necessary because the panel data used are based on historical evidence. Similarly, the longitudinal research design was employed because the study extends beyond a single moment of time. The study is longitudinal covering a period of fifteen (15) years from 2009 to 2023 and it employs secondary data sourced from the related companies' annual financial reports for the periods and Nigerian Exchange Factbook. The data were obtained from the selected companies' annual financial reports covering a period from 2009 to 2023. The base year of 2009 is selected because it marks a year after impact investing was introduced by Rockefeller Foundation in Nigeria and the upper year of 2023 is selected due to data availability. The information was accessed from the annual reports published on the companies' official websites as well as Nigerian Exchange Factbook. The 156 companies listed on the floor of the Nigerian Exchange Group (NGX) as of December 31, 2023, make up the study's population. This applies to listed companies in all industries, including construction, oil and gas, healthcare, services, natural resources, consumer goods, industrial goods, agriculture, financial services, conglomerate, and information and communications technology.

Table 1: Sample Size Determination

S/N	Sector	Population Size	Newly listed firms after 2009	Suspended Firms/Inactive as at 2023	Sample Size
1	Agriculture	5	1	0	4
2	Consumer Goods	22	2	7	13
3	Industrial Goods	17	1	9	7
4	Oil and Gas	12	1	5	6
5	Healthcare	10	2	3	5
6	Services	24	1	12	11
7	Natural Resources	5	1	2	2
8	ICT	9	2	5	2
9	Financial Services	40	3	16	21
10	Conglomerate	5	0	0	5
11	Construction	7	0	3	4
Total		156	14	62	80

Source: Authors' Compilation (2024)

The sample size for this study is 80 listed firms. The sample size was achieved after selecting firms that meet the selection criteria adopted. The criteria were introduced to eliminate firms that do not adequately meet the requirements of the study. The criteria are stated; thus, Firms that were incorporated after 2009, which is the base year of this study shall not be used in this study. This criterion caused the elimination of

14 firms. The second criterion is to eliminate firms that were suspended or not active as at the end of 2023, this disqualified 62 firms that fell into this criterion. Thus, only the key players and firms that had all relevant data due to continuous existence were included in the sample. Table 1 shows a summary of the schedule of selection for determination of sample size.

3.1 Model Specification

Theoretically, this study adapts a model that consolidates the assumptions of the stakeholder, agency, resource dependency and slack resources theories. The linkages of these theories are the obligation of discharge of corporate responsibilities to maximize stakeholders' wealth and promote global relevance. Thus, it employs the panel fixed and

random effect regression and expresses corporate performance as a function of shareholders' participation and to mitigate the potential bias arising from omitted factors, which may lead to endogeneity, the study incorporates control variables for market capitalization as shown below:

$$TOBQ_{it} = \beta_0 + \beta_1 BOWN_{it} + \beta_2 CEOO_{it} + \beta_3 IOWN_{it} + \beta_4 MCAP_{it} + \mu_{it} \dots \dots \dots 1$$

Equation 1 expresses the econometric form of the model where corporate performance is proxied in terms of market-based measure of

Tobin's Q and shareholders' participation is proxied in terms of board ownership, CEO ownership and institutional ownership.

$$EAPS_{it} = \beta_0 + \beta_1 BOWN_{it} + \beta_2 CEOO_{it} + \beta_3 IOWN_{it} + \beta_4 MCAP_{it} + \mu_{it} \dots \dots \dots 2$$

Similarly, equation 2 expresses the econometric form of the model where corporate performance is proxied in terms of profitability-based measure of earnings per share and

shareholders' participation is proxied in terms of board ownership, CEO ownership and institutional ownership.

$$MVAD_{it} = \beta_0 + \beta_1 BOWN_{it} + \beta_2 CEOO_{it} + \beta_3 IOWN_{it} + \beta_4 MCAP_{it} + \mu_{it} \dots \dots \dots 3$$

Also, equation 3 expresses the econometric form of the model when corporate performance is measured by market value added and

shareholders' participation is proxied in terms of board ownership, CEO ownership and institutional ownership.

Where:

TOBQ	=	Tobin's Q
EAPS	=	Earnings per Share
MVAD	=	Market Valued Added
BOWN	=	Board Ownership
CEO	=	CEO Ownership
IOWN	=	Institutional Ownership
MCAP	=	Market Capitalization
β_0	=	Constant
β_1 - β_4	=	Slope Coefficient
μ	=	Stochastic disturbance
i	=	i th company
t	=	time period

4. Results and Discussion

4.1 Descriptive Statistics and Correlation Analysis

The study began the analysis by conducting a descriptive statistic to understand the properties of the data under study. Thus, in Table 2, the study found that the mean of corporate performance when measured in terms of Tobin's Q (TOBQ) is 1.16, with a standard deviation of 1.32. Furthermore, the mean of corporate performance when measured in terms of market value added (MVAD) is 0.29, with a standard deviation of 1.21. The mean of corporate performance when measured in terms of earnings per share (EAPS) is 1.58, with a standard deviation of 5.72. Specifically, the study shows that the market value of the firms, when examined in terms of Tobin's Q, is about ₦1.16 in relation to their book value of assets. Furthermore, the results from the descriptive statistics reveal that, on average, the performance added was about ₦0.29 for the firms. In terms of earnings per share, the results imply that, on average, shareholders were able

to earn about ₦1.58 for every unit of share during the period under study. In the case of the independent variable, we find that shareholders' participation, when measured in terms of board ownership (BOWN), is 15.66, with a standard deviation of 22.18. This implies that, on average, about 16% of the shareholding is attributed to board members during the period under study. In terms of CEO ownership (CEOO), the results show that the mean of CEO ownership is 3.43, with a standard deviation of 10.14, indicating that the CEOs of the firms held, on average, 3.43% of the shares of the firms under study. Furthermore, the table reveals that the mean of institutional ownership (IOWN) is 45.68, with a standard deviation of 25.82, indicating that, on average, about 46% of the shares of the firms were held by institutions. For the control variable, the study finds that the mean of market capitalization (MCAP) is 6.91, with a standard deviation of 0.91. This result highlights the relative stability in the size of the firms under study, as represented by their market capitalization.

Table 2: Descriptive Statistics

VARIABLE	MEAN	STD. DEV	MIN	MAX	NO OBS
TOBQ	1.16	1.32	-11.34	12.63	1200
MVAD	0.29	1.21	-12.01	11.81	1200
EAPS	1.58	5.72	-38.99	57.67	1200
BOWN	15.66	22.18	0	92.91	1200
CEOO	3.43	10.14	0	63.92	1200
IOWN	45.68	25.82	0	98	1200
MCAP	6.91	0.91	3.67	9.21	1200

Source: Authors' Compilation (2024)

Next, the study examined the relationship between the variables by employing the correlation analysis technique. To demonstrate the relationship between the variables of interest, Spearman's rank-order correlation was used after the data underwent a non-linear transformation. In Table 3, we find that board

ownership (-0.0632) has a negative association with corporate performance when measured in terms of Tobin's Q. The independent variable of CEO ownership (-0.2176) also has a negative association with corporate performance when measured in terms of Tobin's Q. However, the independent variable of institutional ownership

(0.6317) has a positive association with corporate performance when measured in terms of Tobin's Q. This result implies that all the variables under the independent variable category of shareholders' participation are negatively associated with corporate performance when measured in terms of Tobin's Q during the period under study, except for institutional ownership. Furthermore, the results from Table 3 show that board ownership (-0.1418) has a negative association with corporate performance when measured in terms of market value added. The independent variable of CEO ownership (-0.1655) also has a negative association with the dependent variable of corporate performance when measured in terms of market value added.

However, the independent variable of institutional ownership (0.3221) has a positive association with the dependent variable of corporate performance when measured in terms of market value added. This result implies that all the variables under the independent variable category of shareholders' participation are

negatively associated with the dependent variable of corporate performance when measured in terms of market value added during the period under study, except for institutional ownership. Finally, we find that board ownership (-0.1091) has a negative association with corporate performance when measured in terms of earnings per share. The independent variable of CEO ownership (-0.1632) also has a negative association with the dependent variable of corporate performance when measured in terms of earnings per share. However, the independent variable of institutional ownership (0.2018) has a positive association with corporate performance when measured in terms of earnings per share. This result implies that all the variables under the independent variable category of shareholders' participation are negatively associated with corporate performance when measured in terms of earnings per share during the period under study, except for institutional ownership.

Table 3: Correlation Analysis

VARIABLES	TOBQ	MVAD	EAPS	BOWN	CEOO	MCAP
TOBQ	1.0000					
MVAD	0.6640	1.0000				
EAPS	0.4182	0.3191	1.0000			
BOWN	-0.0632	-0.1418	-0.1091	1.0000		
CEOO	-0.2176	-0.1655	-0.1632	0.5221	1.0000	
IOWN	0.6317	0.3221	0.2018	-0.2184	-0.6311	
MCAP	0.6519	0.4109	0.5411	-0.4216	-0.3122	1.0000

Source: Authors' Compilation (2024)

4.2 Regression Analyses

The study investigates the longitudinal effect of stakeholders' engagement on corporate performance as well as to test the formulated hypotheses, the study employs a panel regression analysis since the data have both time series and cross-sectional properties. Table

4 represents the results obtained from the models. For Tobin's Q, the first proxy of corporate performance, the pooled OLS regression reveals an R-squared value of 0.1721, indicating that the independent variables explain approximately 17% of the variation in corporate performance during the

study period. The remaining 83% is captured by the error term. The F-statistic (26.00) and its p-value (0.0000) confirm that the pooled OLS model is statistically significant at the 1% level and suitable for inference. For Earnings Per Share (EPS), the second proxy, the pooled OLS regression produces an R-squared value of 0.1686, showing that the independent variables account for about 17% of the variation in corporate performance. The F-statistic (25.40) and p-value (0.0000) also indicate statistical significance at the 1% level, validating the model for inference. For Market Value Added (MVA), the pooled OLS regression reports an R-squared value of 0.1875, suggesting that the independent variables explain about 19% of the variation in corporate performance. The F-statistic (28.87) and p-value (0.0000) confirm the model's statistical fitness at the 1% level. Notably, MVA explains a slightly higher proportion of the variance in corporate performance compared to Tobin's Q and EPS.

To ensure robustness, the study examines multicollinearity and heteroscedasticity. The mean Variance Inflation Factor (VIF) across all models is 1.18, well below the threshold of 10, indicating no multicollinearity (Gujarati, 2004). However, the *Breusch-Pagan* test for heteroscedasticity reveals significant p-values across all pooled OLS models, indicating heteroscedasticity violations. Consequently, the study addresses this issue by employing fixed

and random effects panel regression models, as recommended by Greene (2003). For Tobin's Q under the fixed-effects model, the F-statistic is 33.04, with a p-value of 0.0000, confirming the model's statistical significance. The fixed-effects model achieves an R-squared value of 0.2224, suggesting that the independent variables explain 22% of the variation in corporate performance during the study period, an improvement over the pooled OLS model. For Earnings Per Share, the fixed-effects regression model produces an R-squared value of 0.2173, meaning the independent variables explain approximately 22% of the systematic variation in corporate performance when measured by EPS. The F-statistic (31.45) and p-value (0.0000) confirm the model's statistical validity. For Market Value Added, the fixed-effects model yields an R-squared value of 0.2358, indicating that the independent variables account for about 24% of the changes in corporate performance. The F-statistic (35.02) and p-value (0.0000) confirm the model's statistical significance. Comparatively, MVA remains the proxy with the highest explanatory power across all models. Finally, the Hausman test determines the preferred model between fixed and random effects. For Tobin's Q and MVA, the test favors the fixed-effects model, indicating that it better accounts for unobserved heterogeneity. For EPS, the random-effects model is preferred due to the chi-squared test result and p-value.

Table 4: Regression Analyses of Stakeholders' Participation and Corporate Performance

	Tobin Q Model			Earnings Per Share Model			Market Value Added		
	TOBQ Model (Pool OLS)	TOBQ Model (Fixed Effect)	TOBQ Model (Random Effect)	EAPS Model (Pool OLS)	EAPS Model (Fixed Effect)	EAPS Model (Random Effect)	MVAD Model (Pool OLS)	MVAD Model (Fixed Effect)	MVAD Model (Random Effect)
CONS.	-2.834 {0.000} ***	-7.583 {0.000} ***	-4.934 {0.000} ***	-15.512 {0.000} ***	-12.460 {0.000} ***	-12.794 {0.000} ***	-3.828 {0.000} ***	-8.688 {0.000} ***	-6.025 {0.000} ***
BOWN	0.003 {0.225}	0.005 {0.041} **	0.005 {0.030} **	-0.012 {0.188}	-0.025 {0.006} **	-0.024 {0.006} **	0.002 {0.285}	0.005 {0.058}	0.005 {0.048} **
CEO	0.016 {0.001} **	-0.003 {0.653}	0.007 {0.248}	0.014 {0.512}	-0.002 {0.932}	0.002 {0.927}	0.051 {0.001} **	0.001 {0.941}	0.009 {0.139}
IOWN	0.006 {0.000} ***	-0.009 {0.002} **	-0.000 {0.989}	0.008 {0.224}	-0.003 {0.747}	0.000 {0.970}	0.006 {0.000} ***	-0.009 {0.001} **	-0.000 {0.978}
MCAP	0.521 {0.000} ***	1.306 {0.000} ***	0.862 {0.000} ***	2.439 {0.000} ***	2.052 {0.000} ***	2.076 {0.000} ***	0.532 {0.000} ***	1.337 {0.000} ***	0.891 {0.000} ***
F/Wald Stat	26.00 (0.0000)	33.04 (0.0000)	193.73 (0.0000)	25.40 (0.0000)	8.72 (0.0000)	88.25 (0.0000)	28.87 (0.0000)	36.41 (0.0000)	217.44 (0.0000)
R- Squared	0.1721	0.2224	0.2035	0.1686	0.0702	0.0698	0.1875	0.2397	0.2212
VIF	1.18			1.18			1.18		
Hettest	457.19 {0.0000}			675.36 {0.0000}			513.39 {0.0000}		
Hausman Test		86.10 {0.0000}				4.61 {0.7986}		87.71 {0.0000}	

Note: (1) bracket {} are p-values: (2) **, ***, imply statistical significance at 5% and 1% levels respectively

Source: Authors, (2024)

4.3 Discussion of Findings

The study found that shareholders' participation when proxied in terms of board ownership has a positive and negative significant effect on corporate performance when measured in terms of Tobin's Q and earnings per share respectively at 5% level of significance. However, shareholders' participation has an insignificant positive effect on corporate performance when measured in terms of market value added at either 1% or 5% level of significance. The study documented that board ownership as a measure of shareholders' participation tends to significantly improve Tobin's Q as a measure of corporate performance during the period under study. This implies that managers who are also shareholders will of course align their interests as managers with their interests as shareholders and strive to improve the company's value. This is in line with Berebon and Sorbarikor (2020) study, which examined organizational decision-making and stakeholder engagement for indigenous oil servicing companies in Rivers State, Nigeria, and found that stakeholder engagement has a significant impact on organizational decision-making. The finding negates those of Shingade et al. (2022) who found that shareholder activism has a negative effect on market capitalization and operating profit margin, the two metrics used for assessing valuation and profitability. Specifically, this study follows Jensen and Meckling's (1976) agency model to contend that more managers' ownership results in a convergence of shareholder and management interests, which should lower agency costs and raise company value. Furthermore, board ownership tends to significantly reduce earnings per share measure of corporate performance of public companies in Nigeria during the period under study. However, board ownership insignificantly improves market value added as a measure of corporate performance of public companies in Nigeria. According to the study's findings, board ownership has a mixed effect on Tobin's Q (alignment of interests vs. managerial entrenchment). This is consistent with the findings of Priya and Mohanasundari (2016),

who discovered that dividend policy theories have differing relevance between management and shareholders due to their conflicting interests and that management prioritized organizational growth while shareholders concentrated on maximizing wealth.

The study also established that in terms of CEO ownership as a measure of shareholders' participation, the result shows that CEO ownership has negative insignificant effect on corporate performance when measured in terms of Tobin's Q at either 1% or 5% level of significance, and a positive insignificant effect on corporate performance when measured in terms of earnings per share and market value added at either 1% or 5% level of significance. This study argues that concentrating power in decision making usually entails quicker decisions that might eventually improve corporate performance. However, this study noted that the quality of decisions could suffer if the decisions are rushed (Handdriani et al., 2021), implying that the risk of poor performance could increase. The effect of CEO ownership concentration is however, somewhat dependent on industry characteristics and the effect is thus not always negative. On the contrary, Combs et al. 2007 argue that ownership concentration to the CEO can be beneficial for the firm, and thus beneficial for firm performance.

Shareholders' participation when proxied in terms of institutional ownership has a negative significant effect on corporate performance when measured in terms of Tobin's Q and market value added at 5% level of significance, but a positive insignificant effect on corporate performance when measured in terms of earnings per share at either 1% or 5% level of significance. Specifically, the findings imply that shareholders' participation has mixed effects on the different measures of corporate performance employed in this study. The study opined that institutional investors typically own a sizable portion of the equity and can directly or indirectly affect management's decisions by trading their shares. As a result, portfolio investments and a solid rapport with the company they have invested in are

characteristics of institutional investors, and thus influential in corporate performance. This follows the position of Gupta et al. (2020) who examined stakeholder engagement techniques, national institutions and company performance. They discovered a number of context-dependent pathways that connect high stakeholder involvement to successful business performance. The study negates the findings of Ojeka et al. (2016) who studied institutional shareholder engagement, corporate governance, and the financial performance of Nigerian firms. Their findings showed that lower returns were obtained from common stock shareholders' investments as institutional ownership increases.

5 Conclusion and Recommendation

This study examined the impact of shareholders' participation on corporate performance in listed firms in Nigeria, with corporate performance measured using Tobin's Q, earnings per share (EPS), and market value added (MVA). The primary objective was to assess the influence of board ownership, CEO ownership, and institutional ownership on corporate performance from 2009 to 2023. The findings reveal that shareholder participation has a mixed impact on corporate performance, with significant variation across ownership structures and performance proxies. Board ownership showed a significant positive effect on Tobin's Q but negatively affected EPS, highlighting its dual impact on corporate outcomes. CEO ownership demonstrated a positive but insignificant influence on EPS and MVA, suggesting that while ownership by CEOs may align their interests with corporate goals, the effect might not be substantial. Institutional ownership exhibited an insignificant impact on Tobin's Q and positive yet insignificant effects on both EPS and MVA, underscoring the limited role of institutional investors in driving corporate performance within the context studied. These results indicate that shareholder participation can both enhance and hinder performance, depending on the ownership structure and the performance metric in focus.

The study concludes that shareholder participation, particularly through board and CEO ownership, plays a critical role in shaping corporate performance. However, the influence is not uniformly positive or significant, suggesting that a balanced approach to ownership structuring is necessary to optimize corporate outcomes. Understanding the intricate relationships between ownership types and performance proxies provides valuable insights for stakeholders seeking to enhance corporate governance and performance. Based on these findings, public companies should ensure that shareholder participation is effectively aligned with their strategic objectives. Policies should be designed to optimize ownership structures while mitigating potential conflicts of interest. Managers and directors must recognize the need for an appropriate balance in ownership concentration to promote both accountability and decision-making efficiency. This requires fostering a governance environment that encourages the active participation of shareholders without undermining the independence of the board or management.

For board ownership, firms should leverage the positive influence of board members with ownership stakes by aligning their incentives with long-term performance objectives. This alignment will ensure that board decisions are strategically sound and focused on sustainable value creation. Directors should also work collaboratively with shareholders to establish governance frameworks that support effective oversight and accountability. In the case of CEO ownership, firms must carefully manage the balance of authority between CEOs and the board to prevent over-centralization of power. While CEO ownership can align the CEO's interests with those of shareholders, excessive control could pose governance risks. Policymakers should encourage transparency and implement checks and balances to ensure that CEO ownership contributes positively to corporate performance. Institutional investors should adopt a more active governance role to enhance their impact on corporate

performance. Companies can engage institutional investors in constructive dialogues to align performance expectations and strategic goals. Analysts and policymakers should also promote frameworks that empower institutional investors to participate responsibly and contribute to corporate growth.

This study contributes to knowledge by providing empirical evidence on the nuanced relationship between shareholder participation and corporate performance in Nigeria. It contextualizes these findings within the framework of public companies, offering insights into the role of ownership structures in shaping corporate outcomes. The study adds to the theoretical discourse on agency theory by highlighting the complexities of aligning shareholder interests with corporate goals. Methodologically, it employs a robust longitudinal approach, enhancing the reliability

and applicability of its findings to similar contexts. Future research could explore these dynamics in private or unlisted firms to offer a broader understanding of shareholder participation across different organizational structures. Expanding the analysis to other regions or sectors could also provide comparative insights and deepen the understanding of the contextual factors influencing corporate performance. Additionally, investigating the moderating role of governance mechanisms, such as board diversity or external audits, could provide more nuanced perspectives on the relationship between shareholder participation and corporate outcomes.

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DEMOCRACY AND WOMEN'S PARTICIPATION IN POLITICS: A STUDY OF BAYELSA STATE, NIGERIA

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Abstract

The study examines women's political participation in Bayelsa State. The study is motivated by the need to give insight into women political participation in the state with a view to bridging the lacuna in existing literature. The purpose is to ascertain the contributions of the female gender and how women have been empowered in the state's political development, given the crucial role of women in society. The study is a desk-based research using a descriptive approach. Secondary sources formed the fulcrum of data collection and analysis. Lev Vygotsky's sociocultural theory serves as a framework for analyzing women's political participation in Bayelsa State. The study finds that women in Nigeria are faced with several challenges, ranging from sociocultural barriers, negative perceptions, political violence, structural issues of political polity, financing, and constitutional impediments, among others. It concludes that women's political participation remains minimal in Bayelsa State, reflecting the general malaise in Nigeria's political development. The study recommends among others, a constitutional framework that prioritises women's inclusion for the enhancement of democracy and good governance at all levels.

Keywords: Bayelsa State, Democracy, Participation, Politics and Women.

1. Introduction

Globally, women are underrepresented in politics (Herre, 2024). Politics in Nigeria is dominated by men even though *women constitute almost half of the country's total demography* (Taiwo, 2010). Afe Babalola (2024) lamented that the "overwhelming representation of women at most political rallies has not transformed to increased opportunities for women to contest election". Nigeria ranks in the bottom ten globally in women's representation in national parliaments, according to the Inter-Parliamentary Union (IPU, 2023). According to Olubela (2023), women's representation remained at 15% in Nigeria despite the near parity of voter registration between men and women in past election cycles. For instance, in the 2019 State House of Assembly elections, out of 988 seats across the

36 states, only 48 female lawmakers were elected, representing approximately 4.85% of the total (ibid) Women are faced with numerous challenges that affect their ability to participate in politics in Nigeria.

Bayelsa State since 1999 has seen minimal female representation across all levels, reflecting the broader national trend of underrepresentation of women in Nigerian politics. For instance, as of 2019, only three women were members of the 24-member Bayelsa State House of Assembly, representing approximately 0.72% of the total (Oyadongha, 2011). The trend is the same with female political appointees. For example, there were only five women who served in various commissioner roles from 2007 - 2012 and four women commissioners served from 1999 – 2005 (Oyadongha, 2011: Iwori, 2003).

Bayelsa State is one of the six states in the Niger Delta region, South-South Nigeria. Bayelsa State is the oil capital of Nigeria, where crude oil of commercial quantity was first struck in Otubagi (Oloibiri) in 1956. Predominantly Ijaw-speaking, the state comprises eight Local Government Areas (LGAs): Brass, Ekeremor, Kolokuma/Opokuma, Nembe, Ogbia, Sagbama, Southern Ijaw, and Yenagoa. The state was created out of the present Rivers State in 1996. Yenagoa as the state capital, Bayelsa State has a population of 2,530,000 (estimated) as of 2022, making it the least *populous state in Nigeris*, a major oil-producing state with significant reserves of crude oil and natural gas, the state's economy contributes significantly to Nigeria's overall revenue (Bayelsa State, 2024).

As one of Nigeria's youngest states, Bayelsa State has had negligible female participation in politics. This trend cuts across both elective and appointive positions at local, state, and national levels. Hence, the paper aims to examine the underrepresentation of women in politics and its implications for gender balancing in Bayelsa State.

Objectives

1. *Examine the perception of women participating in politics in Bayelsa State.*
2. *Examine the extent of women's political participation in Bayelsa State.*
3. *Determine the factors hindering women's participation in politics in Bayelsa State.*
4. *Evaluate the implications of women's participation in politics in Bayelsa State.*

2. Literature Review

Nwagwu, Iwuala & Ebeh (2024) in their work on public perception of women's political participation in Nigeria find that women have the training and skills necessary to participate in politics, the perception, however, creates a considerable barrier, restricting women's participation in the political process and limiting their representation. *Similarly, Funmilayo (2019) observes that women in Nigeria have been underrepresented in positions of power*

and influence due to sociocultural sentiments and perceptions of the female gender. Abdul, Baban'umma & Ibrahim (2019) in their study "Cultural Beliefs and the Challenges of Women's Political Participation in Nigeria" trace the marginalization of women in political participation to cultural attitudes and perceptions of the role of women in traditional society. Aligning with the above, SDN (2020) states that, negative public perception of female politicians is one reason women and girls show little interest in getting into politics.

Women's political participation in Bayelsa State is insignificant, reflecting Nigeria's political trajectory. Irabor (2011) opines that "Nigerian women are grossly underrepresented and dominated by men; even though women constitute about 60% of the registered voters in the country and are also active participants in political rallies and campaigns across the nation". SDN (2020) posits that women's participation in politics as citizens and as holders of political positions in the Niger Delta are severely underrepresented.

Studies indicate that women's representation in political positions in the Niger Delta region, including Bayelsa State, has historically been low due to various factors. Ekiye & Wiche (2024) find in their study that, lack of good educational qualifications is a major reason women are not appointed to senior management positions in Bayelsa State. Other factors affecting the advancement of women in the state civil service include the cultural belief that the role of women is in the kitchen, lack of support from other women, policy inconsistency, stereotyping, gender discrimination, and gender inequality. Interrogating the subject, OXFAM (2016) submits that, women are excluded from governance and democratic processes due to patriarchal cultural factors that enable men to dominate the political and social space. Additionally, Oluwafunmilayo (2024) explain that women in Bayelsa State experience all five forms of gender-based violence that prevent them from fully participating in all aspects of elections.

Apina & Adeoye (2024) observe since the growth of any country involves the full

participation of both men and women in all spheres of human effort, women's political engagement is a necessary condition for gender equality and true democracy: while it encourages women's direct participation in public decision-making and ensures more responsibility to women. Sivakumar (2016) maintains that gender equality and women's empowerment are crucial to bridging the gaps in the electoral process and enabling women to fully participate and contribute to democratic governance.

Theoretical Framework

Sociocultural theory is a sociological framework that seeks to understand the relationship between culture and society, and how they interact to shape human behaviour and social structures. It explores how cultural practices, beliefs, and values are transmitted and maintained within a society. Sociocultural theory is rooted in the work of a Russian psychologist, Lev Vygotsky (1934-1978) who introduced key concepts such as the zone of proximal development. The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in the development of cognition. Vygotsky believed everything is learned. The theory highlights the role of cultural hegemony in maintaining power imbalances and reinforcing social hierarchies.

By examining how cultural capital is distributed within a society, one can better understand the mechanisms through which social inequalities are perpetuated. Hence, sociocultural theory significantly explains women's underrepresentation in most political processes due to primordial influences. Studies revealed that the biggest challenge confronting women in politics is negative perception, which sees the female gender as an interloper in a men-dominated political space.

3. Methodology

The study is desk-based research using a descriptive approach. That means secondary

sources formed the basis of data collection, interpretation and analysis. Data was traced to, and obtained from print and internet resources such as journals, books, newspapers, and gazettes, among others. The thrust of analysis was systematically processed under select themes and sub-themes designed to address the salient aspects of the objectives.

Perception of Women in Politics in Bayelsa State

In Bayelsa State, women's representation in politics has been historically limited since the democratic transition in the country which allowed for increased participation from various demographics, including women. The lack of gender representation reflects a broader pattern across Nigeria, where systemic sociocultural stereotypes and institutional barriers significantly hinder their involvement in the political landscape (Taoyang, 2019). Sociocultural sentiments such as traditional and religious norms and beliefs assign gender roles, making women's political aspirations seem incongruent with expected gender roles. This creates a climate where women face scepticism or self-belief when seeking for political position (Oluwafemi, 2024).

Negative perception of women in politics is heightened by violence which characterizes most elections in Nigeria, including Bayelsa State. It is a common belief that women are the weaker sex as such may not be able to withstand the heat and rigours of election. The fear of violence which disproportionately affects women as voters, candidates and election monitors serves as a major deterrent to women's active involvement in elections (Wood, 2024).

The extent of Women's Political Participation in Bayelsa State.

Bayelsa State has not recorded so much progress in women's political representation since 1999 as shown in Table 1 below:

Table 1: **Bayelsa State Female Elected Officials and Political Appointees (1999-2024)**

State			Federal
S/N	Office	Number	Number
1.	Governor	0	
2.	Deputy Governor	0	
3.	State House of Assembly	4	
4.	Local Government Council Chairperson	4	
5.	Local Government Council Vice Chairperson	12	
6.	Local Government Councillors	75	
	Female Appointees		
7.	Commissioners	17	
8.	Judges	2	
9.	Others	7	
10.	Senate		0
11.	House of Representatives		4
	Total	118	4

Source: Compiled by Authors (2025)

From Table 1 above, no woman has held the position of governor or deputy governor in Bayelsa State since the inception of democratic governance in 1999. The state has elected only four female members into the State House of Assembly within this period. Also, only four women have held the position of Local Government Council chairperson in the state. There have been about 12 elected vice-chairpersons so far in Bayelsa State, while around 75 women have been elected as councillors. Additionally, there have been few women who have been appointed to executive positions in the last over twenty years in the state. For instance, about 17 of all the state commissioners appointed have been women, while two women have occupied the position of Chief Judge. About seven women have held various chief executive portfolios in the state. At the national level, no woman from Bayelsa State has been elected into Nigeria's Upper House known as the Senate. However, four women have been elected into the Lower House known as the House of Representatives in 1999, 2003, 2015 and 2023, respectively.

Factors hindering Women's Political Participation in Bayelsa State

Apart from negative perception stemming from sociocultural beliefs, women in politics face numerous barriers, accounting for the continued decline in gender representation.

Structural Barriers

Structural barriers facing women in Nigeria include the level of socio-economic development of the country which weighs heavily against women than men. Socioeconomic hindrances include unemployment, poverty, illiteracy and limited access to education, lack of sufficient financial resources, the dual role women play in the family and full-time job, and choice of profession (EMC, 2014). Studies showed that women's transition into productive work is still slow in Nigeria as they have less access to both school and jobs. For instance, while men have 65% financial independence in Nigeria, women have only 35%. Also, working women receive 20% less income than their male

counterparts (*Nigeria Gender Report, 2012*). Socioeconomic inequality hinders upward movement in social class, reflecting the 3.9% low representation of women in Nigeria's National Assembly (Anyalebechi, 2016; Matthew et al., 2020).

Institutional Barriers

According to the EMC report (2014), Institutional barriers are one of the fundamental barriers to women's involvement in active politics. The manner, in which politics and political parties are structured in Nigeria, is male-dominated, such that women have limited access to leadership positions to ensure adequate representation. The establishment and organization of political parties favour men than women (Karam & Lovenduski, 2005). According to Pogason (2012:) the party constitutions relating to boards of trustees, party caucuses and congresses, which are powerful decision-making organs in the party, have few women and quotas apportioned to women amount to mere tokenism.

Political Violence and Lawlessness

Elections in Nigeria are characterized by violence, thuggery, and lawlessness which undermines the integrity of the electoral process. Electoral violence, including physical, psychological, emotional, and sexual abuses targeting women and the aged discourages women from participating in political processes. It has a significant impact on women's political participation (Arum, Oluwaleye & Adeleye, 2024).

Lack of Affirmation Action

The 2006 National Policy on women was made to improve the participation of women in political and public life. It stipulates 35% representation of women in politics. However, the policy lacks full implementation in Nigeria largely due to constitutional encumbrances. According to Ikpeze (2011), the Nigerian 35% affirmative action plan lacks the constitutional framework needed to eliminate the discrepancies and foster women's ability to lay claims to their human rights in this regard.

Lack of Gender Support

One of the greatest hindrances to women's participation in politics is the lack of faith and support from women groups. It is a common insinuation that Nigerian women do not support themselves in politics. In recent times, the case of Dr. Sarah Jibril, who was the only female Presidential aspirant of the then-ruling People's Democratic Party (PDP) 2011 primary where she had only one vote out of about 4,000 delegates, is often cited as an example where women failed to support one of their own (Ogaziechi (2021). Following her woeful performance, Dr Sarah Jibril asked a rhetorical question, "Nigerian women should tell me what I have done wrong and how I have misrepresented them that made them afraid to vote for me" (Shuaib, 2011).

Implications of Women's Participation in Politics in Bayelsa State

Gender-inclusive political participation is critical for the deepening and sustenance of democracy. Their inclusion is not only in tandem with global practice but also a matter of rights and justice.

Gender Equality

Women's political participation is a fundamental prerequisite for gender parity and genuine democracy. It facilitates women's direct engagement in public decision-making and is a means of ensuring better accountability for women. Political participation of women is essential for inclusive and responsive democracy. The World Economic Forum (2023) reports that countries with greater female representation at the highest levels progressively remove legal inequality between men and women.

Good Governance

Women's participation in decision-making is beneficial and their role in policy-making has a positive impact on people's lives, including women, children and families in general because they prioritise issues that benefit the most vulnerable in society such as healthcare, welfare and education, among others. The diverse perspectives that women offer foster

inclusive governance and social cohesion, and help to promote economic growth and development (Jarroud, 2015; Cowper-Cowles, 2021).

Conflict Resolution

Women in political leadership are considered more participatory and collaborative than their male counterparts. Women are also more likely to work across party lines, even in highly partisan environments, in negotiation and resolving conflict. Research evidence argues that women's participation in negotiation contributes to the conclusion of talks and the implementation and durability of peace agreements (Rand, 2021).

4. Discussion

Women are generally described in Nigeria's sociocultural milieu as homemakers and caregivers who are to be seen only and not heard. Driven by a deep-rooted belief system, leadership is male-dominated, while women are marginalized. This type of mindset is exemplified by former President Muhammadu Buhari's controversial joke in 2016 when he said "My wife belongs in the kitchen and my living room and the other room" (Ayo-Aderele, 2016). Such sociocultural prejudices against women have far-reaching effects on women's political ambition and participation. Hence, despite the vibrancy of Nigeria's democracy and the relative parity in voter distribution by gender, women's representation in electoral politics remains abysmally low (Nkereuwem, 2023).

Nigeria has low rates of female representation in politics across the states and local government councils including Bayelsa State. For instance, there was no woman out of 17 elected council chairmen in the eight LGAs from 1999-2015 (Jemide, 2016). There have been only four women elected as council chairman and four women in the state House of Assembly since 1999. No woman has occupied the position of governor and deputy governor in Bayelsa State. At the federal level, no woman has been elected as a Senator from the state, while only two

women have been elected as members of the House of Representatives.

Nigeria has ratified most of the international and regional instruments on women's rights such as the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the Beijing Platform for Action and the Maputo Protocol. However, critical challenges remain in the application and domestication of these frameworks, causing Nigerian women to be underrepresented and marginalised from political leadership (Udu, Uwadiogwu & Eseni, 2023). These challenges have persisted despite the near parity of voter registration between men and women in the election process. They include the patriarchal structure of society, sociocultural barriers, financial demand, low-level education, political violence; male-dominated party leadership structure, non-implementation of affirmative policy, and lack of gender support, among others (Iruke, 2024)

Gender balancing in politics is crucial for democratic consolidation and advancement. One of the UN indicators of the level of social development of a society is the extent of empowerment of its women. Latif, Usman, Kataria & Abdullah (2015) opined that women's participation in politics is an important metric of the extent of development of a country. Countries where women are politically empowered and participate in leadership tend to be more egalitarian, inclusive, democratic, and responsive (Naz, Ibrahim & Ahmed (2012). According to Aamir (2015), because of their reproductive role, women contribute more to society than is mandated by their share of the population. Countries where women are politically empowered and participate in leadership tend to be more egalitarian, inclusive, democratic, and responsive (Naz, Ibrahim & Ahmed (2012).

5. Conclusion

Women's representation in Nigerian politics is among the lowest in the world, which cuts across the states including Bayelsa. As one of the youngest and smallest states, women in political participation has made some progress,

especially with the appointment of women to leadership positions. Most of this has been recorded in the last half since the state was created in 1996. The reasons for the slow pace of women's political participation in Bayelsa State are the same reasons that generally challenge the female gender in Nigeria. These include sociocultural barriers, negative perception, financing, uneven party structure against women, political violence, and lack of policy framework, among others.

6. Recommendations

To address these challenges, there should be cultural and religious reconditioning and reorientation, starting at the family and societal level to change the negative stereotypes and narrative against women.

- It is imperative to make the constitutional framework to ensure women's inclusion a priority, which would empower and enhance their political involvement.

- Political parties should be required to create a level playing field for women's participation in politics for the advancement of democracy and good governance at all levels.

- Women should have a change of perception and attitude towards women participation in politics which will enable them support women.

- Gender education at all level of education should be integrated into school curriculum, to inculcate the values of gender inclusivity and parity.

- The girl child should be encouraged and given special attention to ensure women empowerment and political participation.

- Women role model should be given opportunities that would enable them stay beyond their positions and career.

- There should be more Women Advocacy Group to support and empower women, especially in political participation and in public office.

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FINANCIAL PALLIATIVES AND SALE OF FERTILITY EGGS AMONG GIRLS IN DELTA STATE, NIGERIA: IMPLICATIONS FOR SOCIAL CONTROL

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Abstract

This study examined the effect of financial palliatives on the sales of fertilized eggs among Delta state girls, with emphasis on its implications for social control. The data sourced from the field survey were analyzed using descriptive statistics. Meanwhile, the inferential analysis (regression model) was applied to examine the effect of financial palliatives and sales performance. Prior to sharing the questionnaire, a pilot survey of 30 respondents was done. Out of the 300 questionnaire shared, 287 questionnaires were returned and used for the analysis. Meanwhile, Cronbach's Alpha (α) was used to ascertain the internal reliability of the questionnaire. Specifically, financial palliatives reported a Cronbach's Alpha (α) value of 0.842, sales of fertilized eggs reported Cronbach's Alpha (α) value of 0.813 while social control implication has a Cronbach's Alpha (α) value of 0.860. These suggest that all the questionnaire items are internally consistent. This study reported that economic hardship is the major reason why majority of girls in Delta state involve in the sales of their fertilized eggs. The study further reported that financial palliatives and social control mechanisms reduce sales of fertilized eggs among Delta state girls significantly. Hence, the study concludes financial palliatives and social control mechanisms are critical tools for reducing sales of fertilized eggs among girls in Delta state, Nigeria. Consequently, the study recommends that Delta state government should implement sustainable financial aid initiatives targeted at young girls. Also, the Delta state government should develop awareness campaigns which reinforce societal norms against the sales of fertilized eggs..

Keywords: Financial Palliatives, Sales of Fertilized Egg, Nigerian Girls, Social Controls

1. Introduction

Economic hardship and its cascading effects on vulnerable populations have been a persistent challenge in Nigeria. Financial palliatives are implemented as temporary relief measures during periods of economic distress, with the aim to provide monetary or material assistance to those most affected by poverty, unemployment, or other socio-economic challenges. These interventions, often introduced during crises like natural disaster, pandemic or periods of severe inflation, are designed to alleviate immediate hardships. However, their uneven distribution and limited

reach frequently leave marginalized groups, such as adolescent girls, more exposed to exploitation and unethical survival strategies (Okafor et al., 2022; Ameen et al., 2022). Among such strategies, the sale of fertility eggs—commonly referred to as "egg donation"—has emerged as a troubling trend with profound ethical, medical, and social implications.

Fertility egg donation, although marketed as a form of altruism, increasingly operates as a transactional process, especially in resource-limited settings like Nigeria. Young girls, often lured by financial rewards, participate in these

transactions under conditions that exploit their socio-economic vulnerabilities and limited awareness of potential health risks. Studies reveal that some underage donors have little understanding of the long-term medical and psychological consequences associated with egg retrieval procedures, including risks of ovarian hyper-stimulation syndrome, infertility, and emotional distress (Ameen et al., 2022; McCoy et al., 2024). This practice raises urgent questions about the adequacy of legal protections, societal values, and public health policies in safeguarding the rights and well-being of these girls.

The intersection of financial palliatives and fertility egg sales warrants critical examination because it reflects deeper structural issues. Financial desperation often compels individuals, particularly adolescent girls, to seek alternative income streams, with fertility markets presenting an option that seems lucrative yet perilous. For many, participation is not entirely voluntary but shaped by coercive factors, including familial pressures, cultural norms, and manipulative practices by fertility clinics or brokers (Okafor et al., 2022; Ezeome, 2022). In Nigeria, where youth unemployment remains high and gender disparities persist, adolescent girls are disproportionately affected by these dynamics. The lack of comprehensive social controls exacerbates the problem, leaving young donors vulnerable to exploitation with limited avenues for recourse.

This paper examines the complex relationship between financial palliatives and fertility egg sales among adolescent girls in Nigeria. By focusing on this intersection, it seeks to uncover how socio-economic vulnerabilities drive these practices and how weak regulatory frameworks and societal attitudes perpetuate them. The objectives of this paper are fourfold: first, to contextualize financial palliatives and fertility egg sales within Nigeria's socio-economic environment; second, to explore the socio-economic and cultural factors influencing adolescent girls' participation in fertility markets; third, to analyze the implications of these dynamics for public health, social norms,

and child protection laws; and finally, to propose actionable recommendations for policymakers, healthcare professionals, and civil society organizations to address these pressing concerns.

The significance of this study extends beyond academic discourse. It highlights critical gaps in policy and practice, particularly in protecting the most vulnerable demographic—adolescent girls—from exploitative practices. While fertility egg donation has been explored extensively in global contexts, the Nigerian experience remains under-researched, particularly regarding its intersection with financial desperation and socio-economic inequalities. Recent studies have emphasized the need for a localized understanding of these issues, as the unique cultural, economic, and legal landscape of Nigeria shapes the experiences and vulnerabilities of egg donors (Ameen et al., 2022; Okafor et al., 2022). Addressing these gaps is essential for developing effective interventions that not only regulate fertility markets but also strengthen the delivery and impact of financial palliatives.

The implications of this research are profound, touching on public health, legal frameworks, and societal values. The unchecked rise of fertility egg sales among Nigerian girls poses significant risks to their physical and psychological well-being while undermining societal norms that prioritize child welfare. Moreover, it calls into question the effectiveness of financial palliatives in mitigating economic pressures. Without robust social controls, including stricter child protection laws, enhanced public awareness, and equitable economic support, these issues will continue to fester, contributing to a cycle of exploitation and inequality. This paper aims to contribute to the discourse by offering Nigeria-specific insights that can inform policy and practice in addressing this multifaceted issue.

2. Literature Review

Financial Palliatives

Financial palliatives have been a critical tool for addressing economic distress in Nigeria, particularly during times of economic downturns, crises, or widespread poverty. These measures are designed to alleviate the immediate financial burdens of vulnerable populations through monetary aid, food supplies, or other essential resources. However, the effectiveness of these interventions often falls short due to challenges such as limited coverage, corruption, and inefficiencies in distribution mechanisms. According to Okafor et al. (2022), many vulnerable populations, especially adolescent girls, are left without adequate support, leading them to seek alternative and often precarious means of income generation.

The inadequacy of financial palliatives can have far-reaching consequences, particularly for marginalized groups. Ameen et al. (2022) highlight that financial desperation has forced many young women in North-Central Nigeria to engage in exploitative practices, such as oocyte (egg) donation, which exposes them to significant health and psychological risks. These findings align with broader concerns about the limited social safety nets in Nigeria and their implications for public health and socio-economic stability. When financial palliatives fail to reach their intended beneficiaries, they inadvertently contribute to a cycle of vulnerability and exploitation.

Despite the shortcomings, financial palliatives have demonstrated potential when effectively implemented. For instance, conditional cash transfer programs targeting education or healthcare access have shown success in mitigating poverty among low-income households. However, the systemic issues of mismanagement and corruption undermine the overall impact of these programs (Ezeome, 2022). Therefore, to maximize their effectiveness, policymakers must address structural inefficiencies and ensure that financial palliatives reach those most in need.

Fertility Egg Sales

The practice of fertility egg sales in Nigeria is a growing phenomenon, often framed as altruistic donation but driven primarily by financial desperation and the commodification of reproductive health. This section reviews studies that explore the motivations, risks, and ethical dimensions associated with egg donation, emphasizing its implications for young women in Nigeria.

Okafor et al. (2022) describe egg donation as a transaction masked by altruism, where vulnerable women, particularly from low-income backgrounds, are lured with promises of financial rewards. These women often have limited knowledge about the medical risks and ethical considerations, leading to uninformed decisions that can have long-term consequences. Similarly, Ameen et al. (2022) highlight the lack of awareness among female undergraduates in North-Central Nigeria, where many participants in their study could not fully grasp the health implications of egg donation. This lack of awareness raises critical concerns about consent and the exploitation of socio-economic vulnerabilities.

The health risks associated with egg donation are well-documented. McCoy, Haig, and Kotler (2024) discuss how pregnancies involving unrelated embryos—common in egg donation—pose higher medical risks to both donors and recipients. These risks, coupled with the lack of robust regulatory frameworks in Nigeria, leave donors exposed to potential physical and psychological harm. Goedeke, Gamble, and Thurlow (2023) further explore the motivations of egg donors, noting that while financial gain is often a primary driver; some donors rationalize their participation as an act of personal or relational giving. However, the commercialized nature of egg donation in Nigeria complicates such narratives, as financial need often overshadows any altruistic intent.

Ezeome (2022) provides an ethical critique of gamete donation in Nigeria, focusing on the absence of comprehensive legal and ethical guidelines. The author emphasizes the need for

a regulatory framework that prioritizes the safety and dignity of donors, particularly in contexts where exploitation is prevalent. Similarly, Hudson (2020) examines the cultural and ethical dimensions of egg donation, arguing that societal norms and gender expectations further marginalize women who engage in this practice. This marginalization is especially pronounced in patriarchal societies like Nigeria, where women's reproductive autonomy is often limited.

Molas and Whittaker (2022) take a broader perspective, analyzing the branding and commodification of egg donation on digital platforms. Their findings reveal that fertility clinics often romanticize egg donation, portraying it as an empowering choice while downplaying the associated risks. This marketing strategy, coupled with the lack of regulatory oversight, perpetuates a cycle of exploitation where women are drawn into egg donation without fully understanding its implications. Finally, Tober et al. (2023) highlight the global dynamics of egg donation, noting how economic disparities between countries shape local practices. In Nigeria, these disparities are evident in the commercialization of egg donation, where financial incentives overshadow ethical considerations and donor welfare.

Overall, the practice of fertility egg sales in Nigeria reflects a complex interplay of economic desperation, inadequate regulation, and ethical concerns. While financial compensation provides short-term relief for donors, the long-term health and psychological implications, combined with societal stigma, underscore the need for comprehensive reforms. Addressing these issues requires a multi-faceted approach that integrates public health policies, ethical guidelines, and socio-economic interventions to safeguard the rights and well-being of egg donors.

Social Control and Fertility Eggs Sales

Nigeria is yet to have a comprehensive legal framework towards the regulations and prohibition of SFE and other related surrogate

activities (Adeola Oyinlade & Co., 2024), especially in the face of a growing involvement of young girls trooping into the sales of fertility eggs. Reasons for involvement are not far-fetched, as Ojo (2020) identified poverty, illiteracy, economic challenges (financial challenges), and legal frameworks as factors that push for sales of fertility eggs among girls in Nigeria. Health risks, ethical dilemmas, social stigma, victimisation, and victim's exploitations are likely consequences that younger girls who engage in SFE face. To address these consequences, a structured social control system is necessary. The fact is that there is yet an established institutional legal framework that serves to regulate the activities of SFE and surrogacy. The lack of formal legislation to regulate the SFE activities places both the intending egg seller and the health facility and other intending buyers in an ethical and legal limbo, exposing the parties to legal dangers (Adeola Oyinlade & Co., 2024). However, ethical stipulations, medical regulations created by the Nigeria Medical Association, and international treaties are alternatives to the legal framework. Therefore, there is urgent need for an institutional legal framework to serve as social control measure with the goal to address all activities that relates to SFE in Delta State and Nigeria at large (Adeola Oyinlade & Co., 2024). A legal framework must recognise that the health industry has witnessed evolving advancements in reproductive health technology, thus a necessity for an instituted body regulating the processes of fertility egg sales or donations in Nigeria, beginning with informed consent of the person selling or donating, devoid of all forms of exploitation and coercion, followed by consultations with specialised legal and medical practitioners, and the ethical standards of the Nigeria Medical Association. They should also be proactive about domestic and international best practices to navigate the complex issues associated with EFS.

Apart from the institutional legal framework, there are needs for other social control measures. Social control measures, that is

sociologically inclined, with a focus on deterring and preventing the reoccurrence or reduction of SFE. Hirschi (1969) maintained that individuals are less likely to engage in a particular behaviour that is contrary to society when they feel a strong attachment and bond to social norms, institutions, and family. These attachments to social norms, institutions, and families are veritable tools that society can engage with to prevent the reoccurrence of girls engaging in the acts of egg sales. Social control measures might be very effective in countries like Nigeria, where cultural and family ties play a pivotal role in bonding societal members through community collaborations and ethical awareness on the part of the victims and health institutions (Ogunyemi & Eggers, 2018; Ojo, 2020). The introductions to financial palliatives through the conditional cash transfer from the government, enabling financial grants and interventions in terms of soft loans with low interest rates, is a formidable approach to preventing SFE among young girls. To complement financial palliatives, community engagements coupled with educational strategic interventions, through raising social awareness of the dangers associated with this act, could be achieved in collaboration with community members and stakeholders in the educational and reproductive health sectors (Yusuf, 2007; Ogunyemi & Eggers, 2018).

Ojo, (2020), Harvard Kennedy School (2019), and World Bank Report (2020) suggested that to implement this policy, Government should create a separate department supervised under the Ministry of Health and in collaboration with the National Orientation Agencies and the law enforcement agencies. The department must adopt an eclectic and robust approach that prioritises a social control tied with a financial palliative support system in collaboration with families, communities, NGOs, religious bodies, and stakeholders in the educational and health sectors to achieve a comprehensive frame to fight these challenges that are growing on a daily basis

Gaps and Implications

While existing research on fertility egg sales provides valuable insights into its socio-economic, health, and ethical dimensions, significant gaps remain in the literature. One key limitation is the scarcity of localized studies focusing on the Nigerian context. Most studies, such as those by McCoy, Haig, and Kotler (2024), provide generalized global insights without addressing Nigeria's unique socio-cultural and economic factors. Although Ameen et al. (2022) and Okafor et al. (2022) examine Nigerian egg donors' knowledge and motivations, these studies are largely concentrated in specific regions, leaving the broader national picture unclear.

Another critical gap is the limited exploration of long-term health and psychological impacts on egg donors in Nigeria. While Hudson (2020) highlights the emotional toll of egg donation globally, there is minimal data on how Nigerian donors navigate these challenges within a socio-economic context that often prioritizes financial gain over well-being. The lack of longitudinal studies in this regard makes it difficult to ascertain the prolonged effects of fertility egg sales on Nigerian women.

The role of intermediaries, such as fertility clinics and agents, is another area that requires further investigation. Molas and Whittaker (2022) emphasize the influence of branding and marketing in shaping donor perceptions, but there is little data on how these dynamics operate within Nigeria. The commercialized nature of fertility services often involves aggressive marketing strategies that target financially vulnerable women, as noted by Tober et al. (2023). However, the extent to which Nigerian fertility clinics employ these tactics remains underexplored.

Furthermore, the ethical and legal frameworks governing fertility egg sales in Nigeria are poorly documented. Ezeome (2022) calls for more robust regulations to protect donors, yet there is limited research on the effectiveness of existing policies or the potential for developing new ones. The absence of a coherent regulatory

framework leaves donors exposed to exploitation, as the line between altruism and commodification becomes increasingly blurred.

There is also a need for interdisciplinary approaches that integrate perspectives from sociology, economics, and public health. While studies like those by Goedeke, Gamble, and Thurlow (2023) provide valuable sociological insights, the economic drivers and public health implications of egg donation in Nigeria remain underrepresented. For instance, how does the commercialization of egg donation intersect with broader issues of gender inequality and poverty? Addressing these questions would require a holistic approach that goes beyond the current fragmented understanding of fertility egg sales.

Lastly, the implications of fertility egg sales for reproductive autonomy and social control in Nigeria merit further investigation. Okafor et al. (2022) highlight the power dynamics at play in the donor-recipient relationship, but the broader societal implications of these dynamics are rarely discussed. How do fertility egg sales reinforce or challenge existing gender norms and power structures in Nigeria? Understanding these implications is crucial for developing policies and interventions that prioritize donor welfare while addressing the root causes of exploitation.

Overall, while existing studies provide a foundation for understanding fertility egg sales in Nigeria, significant gaps remain in the areas of health, regulation, socio-economic drivers, and societal implications. Addressing these gaps will require comprehensive, localized research that prioritizes the perspectives and experiences of Nigerian women. This approach would not only enhance our understanding of fertility egg sales but also inform the development of policies and interventions that safeguard donor welfare and promote ethical practices.

3. Methodology

This research centers on the effect of financial palliatives on sales of fertilized

eggs among Nigerian girls emphasis on its implications for social control. The research focused on young girls within the ages of 13-30. This study adopts a survey research design with the intention to elicit information from the respondents which will be used for the analysis. The study adopted girls of age 13-30 located in Delta state, Nigeria. Given the nature of the study, 300 copies of questionnaire were distributed across major cities of Delta state: Asaba, Warri, Agbor, Ozoro and Abraka. The questionnaire captured the demographic details of the respondents, sales volume before and after receiving palliatives, access to financial palliatives, and the ethical issues which surrounds the topic. To increase the response rates, the questionnaire was shared both online and physically.

The data sourced from the field survey were analyzed using descriptive statistics analysis. The analysis focused mainly on simple percentages and sales trends. Meanwhile, the inferential analysis (regression model) was applied to examine the effect of financial palliatives and sales performance. Meanwhile, the researchers sought the parental consents of participants aged below 18 while those aged above 18 were also informed on the purpose of the research. Again, we assured the respondents that their identities will not be disclosed. To further affirm this, the respondents were not asked to fill their names or house addresses. Out of the 300 questionnaire shared between 1st October, 2024 and 30th December, 2024, 287 questionnaires were returned. The response rate of 95.67% is meaningful for policy formulation.

Prior to sharing the questionnaire, a pilot survey of 30 respondents was done. The essence is to ensure that the questionnaire items are clear, unambiguous and relevant. All necessary corrections suggested were effected before the full-scale study. Meanwhile, Cronbach's Alpha (α) was used to ascertain the internal reliability of the questionnaire. Specifically, financial palliatives reported a Cronbach's Alpha (α) value of 0.842, sales of fertilized eggs reported Cronbach's Alpha (α) value of 0.813 while social

control implication has a Cronbach's Alpha (α) value of 0.860. These suggest that all the questionnaire items are internally consistent. The model that was used for the analysis is presented thus:

$$SFE = \beta_0 + \beta_1 FIP + \beta_2 SOC + u_{it}$$

Where:

FIP	=	Financial Palliatives
SOC	=	Social Control
u_{it}	=	Error term
β_0	=	Constant
$\beta_1 - \beta_2$	=	Coefficients

4. Result and Discussion

4.1. Descriptive Statistics Analysis

The data sourced from the field survey were analyzed using descriptive statistics analysis. The descriptive statistical analysis focused

mainly on simple percentages and sales trends. The output is presented in Table 1:

Table 1: Respondents' Demography

		Frequency (F)	Percentage (%)	Cumulative Percentage (%)
Age Brackets (Years)				
	13 to 17 Years	93	32.40	32.40
	18 to 25 years	78	27.18	59.58
	26 to 30 years	116	40.42	100.00
Academic Qualification				
	First School Leaving Certificate	29	10.1	10.1
	SSCE	64	22.3	32.4
	OND	75	26.13	58.53
	HND/BSc	114	39.72	98.25
	MSc	5	1.75	100

Source: Field Survey (2024)

The demographic analysis evidenced that those aged 13 to 17 years are 93, those aged 18 to 25 years 78 while those aged 26 to 30 years are 116. This suggests that majority of the respondents are youths and are exposed.

Meanwhile, the parent consents for those below 18 were gotten before the questionnaire was shared to them (Figure 1)

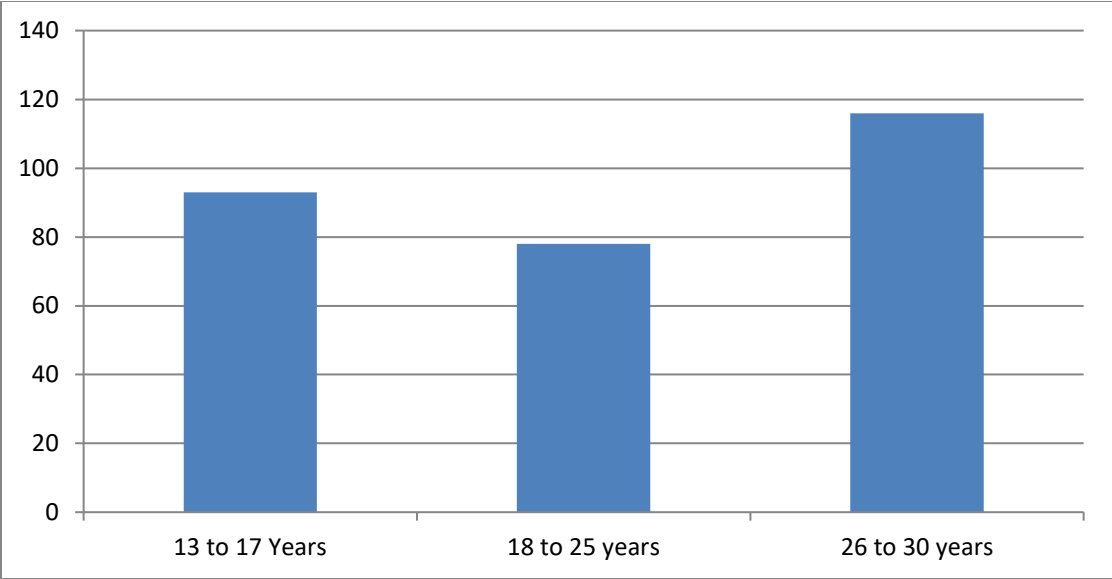


Figure 1: Respondents' Age Brackets (Years)

Source: Field Survey (2024)

In terms of academic qualification, 29 respondents have first school leaving certificates, 64 respondents are SSCE holders, 75 respondents are ND holders, 114

respondents are HND/BSc holders while 5 respondents are MSc holders. By implication, all the respondents are literate (See Figure 2).

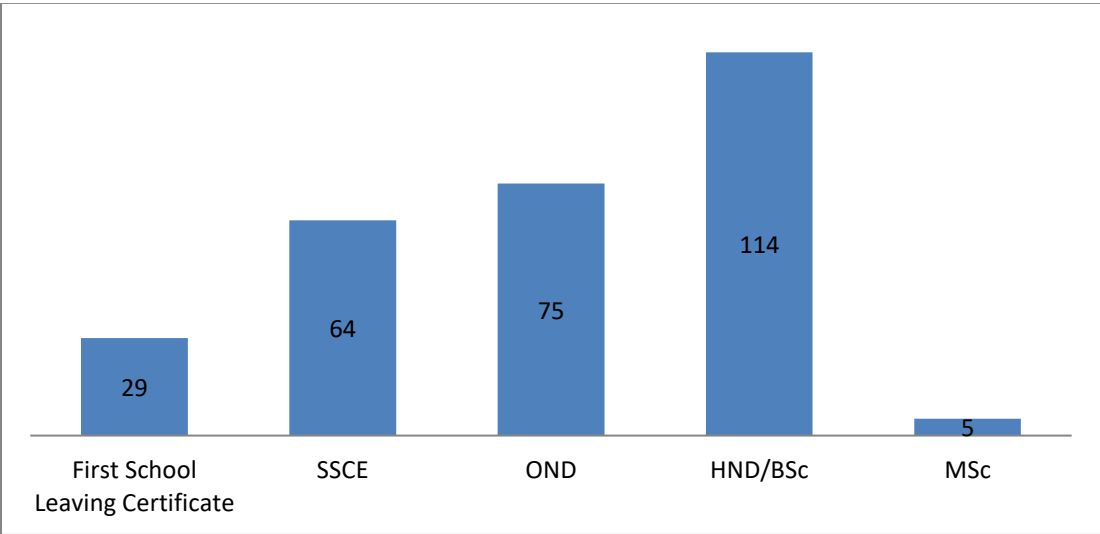


Figure 1: Respondents' Academic Qualification

Source: Field Survey (2024)

Table 2: Financial Palliative Reliance Rate

Parameters	Frequency (F)	Percentage (%)
Reliance Rate	250	87.16
Non-reliance Rate	37	12.84
Total	287	100

Source: Field Survey (2024)

Table 2 evidenced that, most respondents relied on financial palliatives from the Delta state government. This therefore highlights the need for government interventions in reducing the dependency rate in Nigeria given the present

economic hardship caused by the current inflation rate of 34.5%. The result further reaffirmed that, economic hardship is a major predicting factor that forces many young girls into deviant behaviour (see Figure 3)

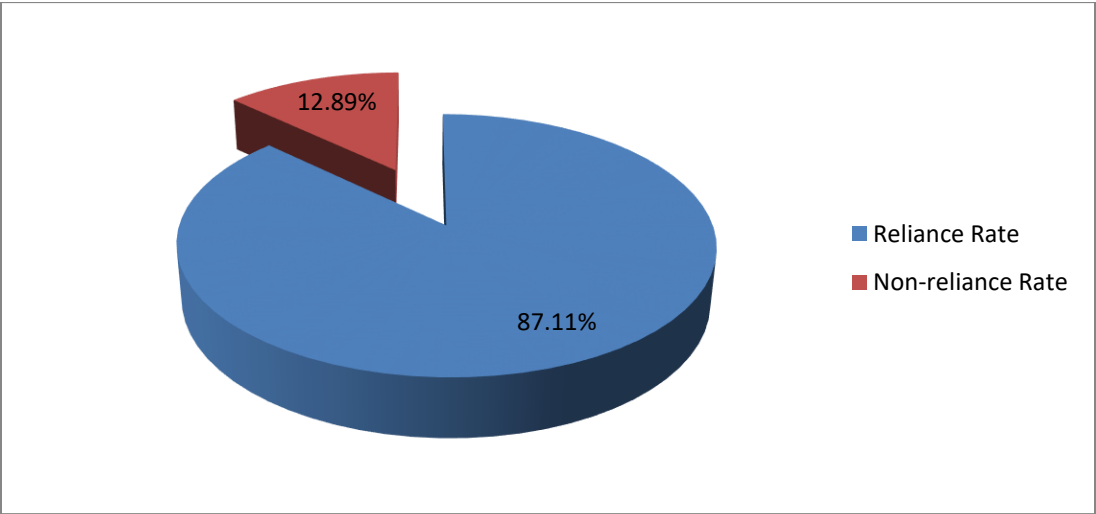


Figure 3: Financial Palliative Reliance Rate

Source: Field Survey (2024)

Table 2: Fertilized Egg Sales Trends

Parameters	Frequency (F)	Percentage (%)
Significant Decrease	187	65
Significant increase	63	22
Neutral	37	13
Total	287	100

Source: Field Survey (2024)

In terms of fertilized egg sales trends, 187 respondents (65% of the participants) confirmed that, the sales of fertilized eggs

reduced significantly, as most of the girls accessed financial palliatives. However, 22% indicated a significant increase suggesting that,

financial palliatives significantly increase the sales of fertilized eggs. Meanwhile, 13% of the respondents are neutral on this issue. Overall, sell fertilized eggs (Figure 4).

majority of the respondents affirmed that, the higher the financial palliatives, the lower girls

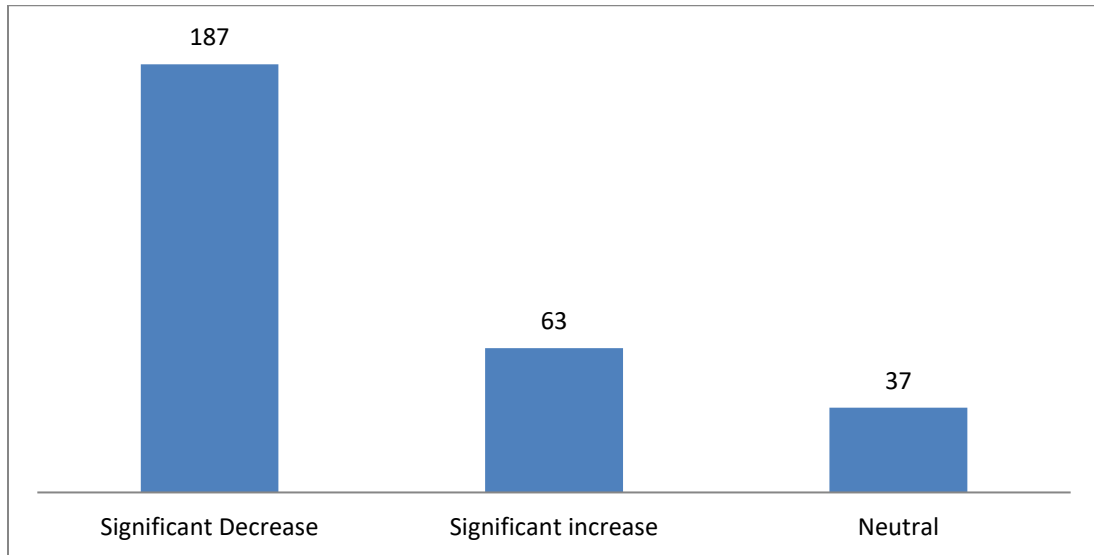


Figure 4: Fertilized Egg Sales Trends

Source: Field Survey (2024)

4.2. Inferential Analysis

This sub-section focused on the effect of financial palliatives on sales of fertilized eggs, a multivariate regression analysis was adopted.

The results are summarized and discussed below:

Table 4.7: Financial Palliatives and Sales of Fertilized Eggs

Sales of Fertilized Eggs (SFE) Observation= 287				
Variable	Coeff	Std. Error	t-Statistic	Prob.
Constant	0.7166	0.1090	6.5722	0.0000
FIP	-0.4019	0.1279	-3.1422	0.0030
SOC	-0.7290	0.1101	-6.6185	0.0000
R ²	0.6319	Adj. R ²		0.6102
F-Statistics		(2,284)		12.4018
Prob(F-Stat.)				0.0000

Source: Authors' Compilation (2024)

The R-squared value of 63.19% suggests that financial palliatives explain 63.19% variations in

SFE while the remaining 47.81% is attributed to the error term.

Discussion

The study confirmed that financial palliative reduces sales of fertilized eggs among girls in Delta State. By implication, a 1% increase in financial palliatives reduces SFE by 40.19%. This study further confirmed that access to FIP reduces poverty level/economic hardship, thereby reducing the likelihood of engaging in the sales of fertilised eggs by the young girls to sustain livelihoods. This affirms the position of Okafor et al. (2022), that many vulnerable populations, especially adolescent girls, are left without adequate support, leading them to seek alternative and often precarious means of income generation. From all indications, adequate financial palliatives will definitely reduce SFE.

The findings underscore that providing financial aid to young female entrepreneurs reduces SFE significantly. This finding is in alliance with the work of Ameen et al. (2022) that financial desperation has forced many young girls into engaging in exploitative practices, such as oocyte (egg) donation, which exposes them to significant health and psychological risks. The World Bank Report (2020) also maintained that low-income countries can address cases of raising poverty through targeted financial interventions to address SFE among women. Harvard Kennedy School (2019) maintained economic disparities are a major factor in the sales of SFE among younger girls in Nigeria. This further reiterates the need for the Delta State government to address the limitations associated with access to government supports. This could further strengthen the impact of financial interventions on SFE.

Again, the study confirmed that social control mechanisms reduce SFE significantly, implying that social control measures, such as parental guidance, regulatory interventions, and community norms, further discourage participation in SFE. This supported Ojo (2020) and Harvard School of Public Health (2020), which state that stronger community ties and social support are some social control approaches towards the prevention of SFE among young girls. The study highlights the

need for community-based social control mechanisms in solving the economic vulnerabilities that drive SFE.

5. Conclusion

This study examined the effect of financial palliatives on the sales of fertilized eggs among Delta state girls. The data sourced from the field survey were analyzed with descriptive statistical. Meanwhile, the inferential analysis (regression model) was applied to examine the effect of financial palliatives and sales performance. The study confirmed that financial palliatives and social control mechanisms reduce sales of fertilized eggs among Delta State girls significantly. Hence, the study concluded financial palliatives and social control mechanisms are critical tools for reducing sales of fertilized eggs among girls in Delta state, Nigeria.

Recommendations

Based on the conclusion, the study recommends that;

1. The Delta State government should implement sustainable financial aid initiatives targeted towards empowerment for the young girls.
2. There should be an awareness campaign on educating young girls and society at large on the adverse effects of the sales of fertilized eggs. This could be achieved through collaborative efforts involving community members, families, NGOs, religious bodies, governments, educational institutions and lastly, health institutions along with their stakeholders.
3. There should be clear government policy (a legal framework to regulate surrogacy activities) geared towards social control that is eclectic and robust in frame with the target to regulate all activities associated with fertility egg sales in Delta State and Nigeria at large.
4. Erring institutional bodies, agents, and health personnel, including girls involved in the sales of fertility eggs, acting outside the ethical guidelines, should be sanctioned in line with the policy stipulations.

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EFFECTS OF NEEM LEAF MEAL ON CARCASS AND ORGAN WEIGHTS OF BROILER FINISHER CHICKENS

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Abstract

*The paper reports an investigation into the inclusion of neem leaf (*Azadirachta indica*) as protein source in the diet broilers. A total of one hundred and fifty broiler chicks were assigned to five dietary treatments in a completely randomized design. Dietary treatments were formulated with varying levels of Neem Leaf Meal (NLM) inclusion. D1 (0%NLM), D2 (5%NLM), D3 (10%NLM), D4 (15%NLM) and D5 (20%NLM) with 30 birds per treatment, 10 birds per replicate and replicated thrice. Experimental trial lasted for eight weeks, carcass and organ weights were determined. There were significant ($P<0.05$) differences in the weight of the head, neck, back, breast, left wing, right wing, left shank, right shank, left drumstick, right drumstick, left thigh and right thigh. The organ measurement of broiler finishers fed neem leaf meal showed significant ($P<0.05$) differences in the weighted organs of broilers fed experimental diets except for the spleen. It was concluded that the use of neem leaf meal had no adverse effect on cut-out parts, organs and visceral weights. 10.00% (NLM) inclusion increased the carcass cut-out parts which is of more important economic value. Therefore, 10% NLM inclusion is recommended for optimal performance in broilers production.*

Keywords: Broilers, Neem leaf, Carcass, Organ weights, Cut-out parts.

1. Introduction

Poultry production ranks among the highest sources of animal protein, and the increase in the size of the poultry industry has been faster than that of other food-producing animal industries (Ohimain and Ofongo, 2012). The popularity of poultry production can be explained by the fact that poultry has many advantages over other livestock and it has been described as the fastest means of solving the problem of protein deficiency in Nigeria (Akpabio *et al.*, 2007). Poultry birds are good converters of feed into useable protein in meat and eggs. Therefore, poultry birds are one of the major sources of animal protein in Nigeria today. The significance of animal protein remains undisputed; animal protein supplies man with quality nourishment that aids growth, development, and tissue replacement. (Salami *et al.*, 2021). Poultry meat is very tender, and

acceptability to consumers is high, regardless of their religious beliefs. The production cycle is quite short, so capital is not tied up over a long period (Aboki *et al.*, 2013). Poultry meat is considered white meat, tender and healthy for consumption. They are commonly used in ceremonies and also provide high-quality food to consumers at the most economically possible and reasonable cost, as this is the main objective of agriculture. Due to the fact that these products are obtained from poultry, the industry has recently become very important. Broiler birds are those kept and reared for meat production from day old to about eight weeks for good quality tender meat as sources of protein in the human diet. However, the profit level in poultry enterprises has been constrained by a number of critical factors, among which are feed quality and cost. Feed is the major component of input cost, accounting for up to 70% (The Poultry Site, 2007) and 86-87%

(Hossain *et al.*, 2014) of the total variable cost of production. Carcass performance is an important economic factor of the broiler business and it is also an indication of the quality and utilization of ration (Nasr *et al.*, 2017, 2019). Neem leaf is a tropical plant widely recognized for its medicinal, antimicrobial and insecticidal properties (Ogbuwu *et al.*, 2011; Esonu *et al.*, 2006). It is also contain significant amounts of crude protein, fiber and bioactive phytochemicals which suggest potential for use in livestock nutrition (Udedibie and Igwe, 2010). Several studies have suggested that neem leaf meal (NLM) could be incorporated into animal diets in moderation to improve performances and immunity (Nworgu *et al.*, 2014; Okoli *et al.*, 2003). With all these promising qualities, the inclusion of neem leaf meal in broiler diets remains under-researched. There is limited empirical evidence on the effects of various levels of NLM on broiler carcass characteristics and internal organ weights particularly during the finisher phase (Ibe *et al.*, 2015). Understand these effects is important for determining the safe and economically beneficial inclusion levels of neem leaf in poultry diets. Neem leaf is popularly known for its medicinal and nutritive benefits, packed with lots of vitamins and minerals, not expensive and is readily available around us; little or no attention has been paid to its nutritional benefits in broilers diet, and there is a need to exploit all its benefits. This is the gap this study intends to fill. This study therefore, was conducted to evaluates the effects of varying levels of neem leaf meal inclusion in broiler diets on carcass characteristics and organ weights and overall growth performance.

2. Materials and Methods

Experimental Site

The experiment was carried out at the Poultry section of the Department of Animal Science, Osun State University, Ejigbo campus. The area is located within the forest zone of Nigeria on latitude 7° 54' 0" N and longitude 4° 18' 54" E. The average elevation is 426 meters (1,398ft) (Monga Bay, 2011). It has average annual rainfall of 1,330mm usually, the rainy season lasts from April – October.

Housing

The birds were raised in colony cages from day-old till they were eight weeks old. The first week was used for brooding to acclimatize the chicks to the environment during which their basal diet was offered. Daily routine operations such as washing drinkers, changing water, offering feed, pen cleaning, and maintenance were observed. Birds were fed *ad libitum*.

Experimental Animals and Management

A total of hundred and fifty (150) day-old broiler chicks were used for this study. The birds were randomly assigned to five (5) dietary treatments in a completely randomized design (CRD) at 30 birds per treatment, 10 birds per replicate and each treatment was replicated thrice. Five dietary treatments were formulated at varying inclusion levels of neem leaf meal (NLM). Diet 1 (control) without NLM, diet 2 contains 5% (NLM), diet 3 contains 10%(NLM), diet 4 contains 15% (NLM), diet 5 contains 20% (NLM) as shown in table 1. The birds were fed their dietary treatments for eight (8) weeks.

Table 1: Gross Composition of Experimental Diets

Ingredients	Experimental diets				
	D1(0%)	D2(5%)	D3(10%)	D4(15%)	D5(20%)
Maize	60.00	60.00	60.00	60.00	60.00
Soybeans meal	25.00	22.00	19.00	16.00	13.00
Neem leaf meal	0.00	3.00	6.00	9.00	12.00
Wheat Offal	5.45	5.45	5.45	5.45	5.45
Palm Kernel Cake	2.00	2.00	2.00	2.00	2.00
Fish meal	3.40	3.40	3.40	3.40	3.40
Bone meal	3.00	3.00	3.00	3.00	3.00
Limestone	0.50	0.50	0.50	0.50	0.50
Premix	0.25	0.25	0.25	0.25	0.25
Common salt	0.25	0.25	0.25	0.25	0.25
Methionine	0.10	0.10	0.10	0.10	0.10
Lysine	0.05	0.05	0.05	0.05	0.05
Total (%)	100	100	100	100	100
Calculated values					
Metabolizable energy Kcal/kg	2978	2978	2978	2978	2978
Crude protein (%)	20.23	20.23	20.23	20.23	20.23
Crude fibre (%)	3.56	3.56	3.56	3.56	3.56
Ether extract (%)	3.74	3.74	3.74	3.74	3.74
Calcium (%)	1.56	1.56	1.56	1.56	1.56
Available phosphorus (%)	0.77	0.77	0.77	0.77	0.77
Lysine (%)	1.11	1.11	1.11	1.11	1.11
Methionine (%)	0.43	0.43	0.43	0.43	0.43

Premix provided to chicks with vitamin A: 1000 IU; vitamin D₃: 500 IU; vitamin E: 5.75 IU; vitamin K₃: 0.5 mg; vitamin B₁: 0.45 mg; vitamin B₂: 1.25 mg; vitamin B₆: 0.75 mg; vitamin B₁₂: 0.00375 mg; Niacin: 6.875 mg; Pantothenic acid: 1.875 mg; Folic acid 0.1875 mg; Biotin H₂:

0.015 mg; C Choline chloride: 75 mg; Cobalt: 0.05 mg; Copper: 0.75 mg; Iodine: 0.25 mg; Iron: 5 mg; Manganese: 10 mg; Selenium: 0.05 mg; Zinc: 7.5 mg and Antioxidant: 0.3125mg

Table 2: Proximate Composition of Experimental Diets

Parameters (%)	D1	D2	D3	D4	D5	SEM
Crude protein	20.83	19.96	19.85	18.97	18.13	1.64
Ash content	9.93	10.41	10.76	12.35	12.85	1.77
Crude fibre	6.18	5.91	6.81	7.03	7.54	1.71
Ether extract	8.03	7.06	6.91	6.05	5.80	1.68
Dry matter	93.93	92.86	92.89	92.74	91.34	996.42
Moisture content	7.53	6.96	7.23	7.76	8.30	1.68
Nitrogen free extract	49.58	50.66	51.32	60.33	52.83	1.76

SEM = Standard Error of Mean. D = Diet

Carcass cut-out parts and organ measurement

At eighth week, two birds were purposively selected from each replication based on average group weight for carcass evaluation. The birds were starved overnight (except for water), weighed individually, and leg-banded for identification prior to slaughtering. After taking the pre-slaughter weight measurement data, each bird was slaughtered and bled for about three minutes. Following bleeding, the birds were de-feathered manually after scalding in hot water for approximately two minutes. Dressed and eviscerated weights were measured. Carcass cut out parts and organ weights were determined.

Statistical Analysis

Data obtained from this study were subjected to a one-way analysis of variance (ANOVA). Significant means were separated using the Duncan New Multiple Range Test as contained in the SAS (2020) package.

3. Results and Discussion

In Table 3, carcass weight of broiler finishers fed neem leaf meal is presented. There were significant ($P < 0.05$) differences in the weights of the head, neck, back, breast, left wing, right wing, left shank, right shank, left drumstick, right drumstick, left thigh and right thigh. Within the context of this research, broiler chicken fed diets containing neem leaf meal (specifically, diet 2 and diet 3), consistently exhibit superior performance in terms of breast meat, neck, wing and thigh weight when compared with birds from other treatment groups. Remarkably, carcass weight, a pivotal determinant of overall meat yield, was significantly influenced by the dietary treatment. This observation negates the research findings reported by Yisa and Longe, (2020), who documented an absence of significant variation in the carcass weight of broiler chicken when fed neem leaf meal.

Table 3: Carcass Weight of Broiler Finisher fed Neem Leaf Meal

Parameter	Diet 1	Diet 2	Diet 3	Diet 4	Diet 5	SEM
Head (g)	46.67 ^a	45.00 ^a	48.33 ^a	45.00 ^a	33.33 ^b	3.16
Neck (g)	75.00 ^{ab}	71.67 ^{ab}	86.67 ^a	66.67 ^{bc}	51.67 ^c	5.82
Back (g)	138.33 ^a	143.33 ^a	156.67 ^a	121.67 ^{ab}	88.33 ^b	13.94
Breast (g)	361.67 ^a	283.33 ^{ab}	392.67 ^a	248.33 ^{ab}	135.00 ^b	52.74
Left-wing (g)	70.00 ^{ab}	58.33 ^{bc}	81.67 ^a	63.33 ^{ab}	38.33 ^c	6.50
Right-wing (g)	70.00 ^a	60.00 ^{ab}	75.00 ^a	65.00 ^a	40.00 ^b	6.83
Left shank (g)	33.33 ^{ab}	30.00 ^{ab}	36.67 ^a	28.33 ^{ab}	21.67 ^{ab}	3.73
Right shank (g)	36.67 ^a	30.00 ^{ab}	36.67 ^a	28.33 ^{ab}	21.67 ^b	3.50
Left drumstick (g)	81.67 ^a	76.67 ^a	86.67 ^a	71.67 ^a	41.67 ^b	7.38
Right drumstick (g)	81.67 ^a	76.67 ^a	85.00 ^a	71.67 ^a	43.33 ^b	6.75
Left thigh (g)	85.00 ^{ab}	78.33 ^{ab}	100.00 ^a	60.00 ^{ab}	43.33 ^b	13.21
Right thigh (g)	83.33 ^a	78.33 ^a	95.00 ^a	66.67 ^{ab}	43.33 ^b	9.78

abcd: Means on the same row with different superscripts differ significantly ($P < 0.05$), SEM = Standard Error of Mean

Table 4 shown the organs measurement of broiler finishers fed neem leaf meal. There were significant ($P < 0.05$) differences in the weighted organs of broilers fed experimental diets except for the spleen. Broiler chickens fed 10.00% (NLM) had significantly heavier liver, empty gizzard, whole gizzard, pancreas, kidney, lung, heart and proventriculus than those fed other diets. The increase in the heart weight of the birds with an increase in the inclusion levels of neem leaf meal could probably be due to higher physiological activities triggered by the presence of anti-nutritional factors in the neem and their associated effects were also reported by Uchegbu *et al.*, (2004). Feeding of neem products to poultry and other livestock has been

reported to have a significant increase in the organ weights of the heart, liver (Esonu *et al.*, 2006; Uko and Kamalu, 2008) and the kidney (Bawa *et al.*, 2007).

The average weight of organs for the gizzard (33 to 50g), lungs (4 to 11g), liver (21 to 25g), spleen (1 to 2g), crop (8 to 15g), heart (5 to 10g) kidney (6 to 11g) and proventriculus (6 to 11g) observed in this study corroborate the range values documented from the findings of Nodu *et al.*, (2016) but relatively low compared with reported values for broilers treated with plant extracts (Ismail *et al.*, 2008; Seoetan and Oyewale, 2009; Tuleun *et al.*, 2011; Sese *et al.*, 2013). They observed that internal organ

enlargement, particularly, liver and pancreas, become inflamed in reaction to the release of trypsin inhibitors in legumes, the authors concluded that residual anti-nutritional factors do not adversely affect organ cuts (Akinmutimi, 2004) but are indicators of presence of anti-nutritional elements which may be harmful.

Results of this study, therefore, suggest the absence or reduced anti-nutritional elements in neem leaf meal and confirm their safety.

Table 4: Organ Measurements of Broiler Finishers fed Dietary Neem Leaf Meal

Parameters	Diet 1	Diet 2	Diet 3	Diet 4	Diet 5	SEM
Liver (g)	25.00 ^{ab}	30.00 ^{ab}	31.67 ^a	26.67 ^{ab}	21.67 ^b	2.59
Empty gizzard (g)	25.00 ^{ab}	30.00 ^b	33.33 ^a	23.33 ^c	20.00 ^c	1.67
Whole gizzard (g)	41.67 ^{ab}	50.00 ^a	46.67 ^a	36.67 ^b	33.33 ^b	2.98
Pancreas (g)	5.00 ^{ab}	2.33 ^b	6.67 ^a	5.00 ^a	2.00 ^b	0.99
Kidney (g)	10.00 ^{ab}	10.67 ^a	11.67 ^a	10.00 ^{ab}	6.67 ^b	1.10
Spleen (g)	2.33	1.00	2.33	1.00	1.00	0.84
Lung (g)	10.00 ^a	10.00 ^a	11.67 ^a	5.00 ^b	4.67 ^b	0.76
Heart (g)	5.00 ^b	8.33 ^{ab}	10.00 ^a	6.67 ^{ab}	5.00 ^b	1.05
Crop (g)	13.33 ^{ab}	8.33 ^b	13.33 ^{ab}	10.00 ^{ab}	15.00 ^a	1.83
Proventriculus (g)	10.00 ^{ab}	10.00 ^{ab}	11.67 ^a	10.00 ^{ab}	6.00 ^b	1.19

abcd: Means on the same row with different superscripts differ significantly ($P < 0.05$), SEM = Standard Error of Mean

4. Conclusion and Recommendation

It was concluded that the use of neem leaf meal had positive effect on cut- out parts, organs and visceral weights. Birds fed 10% neem leaf meal presented the highest weight value for breast meat, wings, neck, and thigh which is of more important economic value. The birds fed 10% neem leaf meal equally present the highest kidney, heart and whole gizzard weight. Neem

leaf meal can replace soybeans by 10%, with better performance on the carcass components of broiler chicken, especially the commercial parts. Therefore, 10% inclusion level is recommended.

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AN EVALUATION OF MAHATMA GANDHI'S PHILOSOPHY OF NONVIOLENCE AND ITS IMPLICATIONS FOR NIGERIA

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Abstract

In contemporary times, society is ravaged by violence and social disorderliness. This paper examines the intricate exploration of Gandhi's philosophy of nonviolence. Gandhi's theoretical framework revolves around the theory of social change. Gandhi's philosophy of nonviolence is built on humanitarian movement. The objective of this paper is not merely a rejection of Gandhi's philosophical ideas but rather a nuanced exploration seeking to highlight the need for the philosophy of love and peace. The paper aims to contribute a more comprehensive and inclusive discourse on the intricate tapestry of the social implications of nonviolence. This paper adopts the analytical framework and hermeneutical methodology to examine Gandhi's philosophy of nonviolence and its implications for Nigeria. Findings, however, show that there are vital points to note in Gandhi's philosophy of nonviolence and there are also interesting facts in Gandhi's conceptualization of nonviolence which emphasizes a more holistic view of the comprehensive conception of the good life and the normative assumptions of society. This paper concludes that Gandhi's contextualization of nonviolence is deeply rooted in ethical considerations and it emulates the Christian virtues as enunciated and demonstrated by Jesus Christ. This paper recommends love among human beings and respect for the dignity of human life.

Keywords: Nonviolence, Philosophy, Violence, Resistance, Society.

1. Introduction

Gandhi's philosophy of nonviolence advocates that humanity ought to emulate the Christian virtues of Jesus Christ and there is no room for timidity or cowardice. For Nirmal Strivastava (2016, 121), thus, in Gandhi's concept of nonviolence there was no place for timidity or cowardice. In other words, Gandhi's philosophy of nonviolence is an extension of the virtues exemplified by Jesus Christ, which in modern times have become known as Christian virtues. These virtues love, long suffering, and peace among all human beings on earth. Christianity plays a critical role in the philosophy of nonviolence. For Martin Luther King (1963, 154), Christianity contends that evil contains the seed of its own destruction. On the other hand,

John Odey (1996, 9) argues that our humanity ought to emulate the Christian virtues of Jesus Christ and that Christ is God and has therefore a universal validity; that he is thus not only for the Christians but for all men; that every human being on Earth is called to emulate the unique and unsurpassable example of Jesus Christ who as the Truth and Prince of peace, has told us the truth and done the truth and told us the good tidings of peace and done peace among us and between us and our Creator whom we had offended by the sins of disobedience. Accordingly, Odey (1996, 9-10), asserts that Gandhi is seen as an ardent protagonist of the truth in the interest of peace, and protagonist of peace in the interest of the will of God, the doing of which is Christ's and emulating Him remains the only way forward for the world to attain the

tenets of the comprehensive conception of the good life. In addition to the foregoing, scholars have also argued that Gandhi is not the author or originator of the philosophy of nonviolence but he takes it to a logical conclusion by practicing it. For Odey (2005, 105), Gandhi himself, who is certainly the most renowned practical model of nonviolent resistance human nature can boast of, made it clear that he was not the author of nonviolence.

Gandhi's philosophy of nonviolence vis-à-vis his philosophy of love has inspired the whole of humanity. The humanity of man cannot thrive in an atmosphere of rancor and violent eruption in an emancipated global society. However, our humanity is at crossroads due to the emergence of global violence caused by Islamic fundamentalism, terror and terrorism, genocides, weapon of mass destruction (WMD), inter/intra tribal conflicts, ethno-religious crises, World War 1 and 11 and other major atrocities that have been committed by our humanity. However, our global community or socio-political environment has been laid on the pedestal of man's inhumanity to man due to the gross violation of fundamental human rights, lack of robust constitutional democracy, lack of religious tolerance, rule of law, freedom of expression, and association.

In addition, this paper is divided into five sections. Section one is the introduction. Section two focuses on Gandhi's philosophy of nonviolence. Section three discusses Gandhi's views of violence versus nonviolence. Section four focuses on Gandhi's philosophy of nonviolence and its implications for Nigeria. Section five is the conclusion and recommendations.

2. Mahatma Gandhi philosophy of Civil Disobedience

Gandhi's philosophy of nonviolence advocates the need for a world that is subsumed under the atmosphere of peaceful coexistence, universal brotherhood, religious tolerance, love, empathy, compassion, long suffering, and respect for the rights and dignity of human life. In other words, Gandhi's political philosophy and his philosophy

of nonviolence is geared towards the theory of social change and the rationalization of society. It is, therefore, germane to note that Gandhi's philosophy of nonviolence is invariably the philosophy of love, philosophy of social change and the philosophy of society. In addition to the foregoing, society cannot thrive in an atmosphere of rancor and society requires the normative outcomes of social order and the beneficial scheme of social cooperation. For Joan Ferrante (2003, 545), society is a large complex of human relationships, and a system of interactions. She **Suggested: "society is characterised, among others, by complex human relationships.** Gandhi's philosophy of nonviolence which is invariably the philosophy of social change and the philosophy of love revolves around the need for social cooperation or coordination. For Ferrante (2003, 545), social change represents any significant alteration, modification, or transformation in the reorganization and operation of social life. For John Hoffman and Paul Graham (2009, 501), society represents a group whose members ~~who~~ relate to one another for specific purposes. Societies exist at all levels. Gandhi's philosophy of nonviolence advocates what George Ritzer and Jeffrey Stepnisky (2014, 46) call the need for reciprocal relations or communicative dialogue. Gandhi's philosophy of nonviolence advocates peaceful coexistence of all men in an emancipated global society.

Gandhi's philosophy of nonviolence and his concept of humanity presupposes that all men are brothers and no doubt has lots of inestimable degrees. He masterly advocates the need for human dialogue through conflict resolution management. Gandhi has been emulated by Martin Luther King on his linear understanding of the conceptual clarification of the philosophy of nonviolence where events ought to follow in a sequential and irreversible order. Also, the claim that the philosophy of nonviolence portrays the rationalization of society is fundamental and unique. However, nonviolence is the best way to go in resolving conflicts of interest. This informs why scholars have argued that communicative dialogue

through nonviolent resistance is the only way forward in any robust civil society. Gandhi's philosophy of nonviolence is credited with Christian virtues and the normative context of democratic liberalism. Liberalism is a socio-economic and political ideology that anchors on the promotion of fundamental human rights, constitutionalism and rule of law, religious tolerance, freedom of expression, and freedom of association.

Furthermore, Gandhi's philosophy of nonviolence is undertaken for various reasons: to explore and understand the critical importance of the philosophy of nonviolence in the society. However, the Western conception of the philosophy of nonviolence, has resemblance with the African perspective of nonviolence. Moreover, violence which is the opposite of nonviolent resistance brings about destruction of lives and property, human suffering and environmental degradation. Violence brings about lack of democratic sustainability. Western and African perspectives of the philosophy of nonviolence allows us to deeply appreciate the unique and peculiar beliefs and practices surrounding the philosophy of nonviolence in an emancipated global society. Gandhi's philosophy of nonviolence demonstrates a more inclusive and comprehensive understanding of the philosophy of nonviolence that takes into ethical consideration the normative assumption of civil society. The political philosophy of Gandhi reflects on the moral implications of the philosophy of nonviolence, as well as its limitations and biases of a linear understanding of the philosophy of nonviolence in the society.

Nevertheless, the obvious cultural diversity inherent in contemporary society calls for a more inclusive and comprehensive understanding of such concepts as nonviolence and violence. Gandhi's philosophy of nonviolence is a juxtaposition with the view of Martin Luther King's philosophy of nonviolence which has gained insight into a series of debates on the philosophy of nonviolence and its crucial importance on contemporary society. For instance, Gandhi and King believed that the

philosophy of nonviolence remains one of the best measures of eliminating social evil. For Ron Ramdin (2004, 15), King began his intellectual quest to find a way of eliminating social evil. Gandhi's philosophy of nonviolence as described by various scholars emphasized the linear understanding of the philosophy of nonviolence prevalent in modern societies and it emphasizes the moral implications of the philosophy of nonviolence in the society. Gandhi's political philosophy fosters a cross cultural understanding, enhance empathy and facilitate effective interactions between people of different cultural backgrounds.

In addition, the philosophy of nonviolence is predicated on the cultural diversity of human experiences which range from the fundamental questions of self-realization and the principle of human equality. Gandhi's conception of God, freedom, moral rights, obligations and moral duties of the individuals in their societies reflects on the Christian virtues of Jesus Christ because religion presupposes the need for social cohesion. For John Hick (2006, 3), religion often makes for social cohesion.

Moreover, Gandhi's philosophy of nonviolent resistance or dialectical approach to the oppressive British government in India and the racial discrimination in South Africa motivated him to adopt the nonviolent approach. For Odey (2005, 12-13) the racial problem in South Africa, is the culmination of a struggle that spanned through a period of profound fundamental problems of man's inhumanity to man in contemporary times. Gandhi played in the struggle and of his nonviolent techniques that requires a good and comprehensive understanding of their historical setting. Accordingly, Odey (2005, 13), argues that both nonviolent practitioners (Gandhi and King) shared many things in common in advancing the sacredness of the humanity of man. Maduabuchi Dukor (2009, 182) in consonance with John Odey's theoretical position asserts that the dismembering of human race is not only historical (as Darwin would argue in his theory of evolution), but also was accentuated and propagated by racist philosophy. Gandhi's

nonviolent resistance arises as a result of what Maduabuchi Dukor (2009, 182-183) calls racist philosophy; by extension man is related to the soul of another and which by implications is legal and social legitimation of the lopsided human race. Based on this theoretical position, Dukor (2009, 183) in consonance with Gandhi's theoretical position further asserts that Gandhi's nonviolent philosophy is a radical response to the lopsided human race.

Nonetheless, many scholars have associated nonviolent resistance with civil disobedience. However, there is an inextricable nexus between nonviolence and civil disobedience. Civil disobedience is the legitimate means in which people in the political state express their grievances to the government whenever their needs and aspirations are not met by the government. As rightly observed by Wolfgang Kersting (1992, 346-347), many critics mistake violent revolution for civil disobedience and civil disobedience and violent revolution do not convey the same meaning. Accordingly, Kersting (1992, 347-348) argues that civil disobedience means the legitimate manner in which the people express their grievances to any oppressive government in any civil society. Hoffman and Graham (2009, 429) in agreement with Kersting argued that civil disobedience is the nonviolent breaking of a law on moral grounds. Civil disobedience occurs in a liberal democratic setting. Although, few people may ever engage in civil disobedience in their lifetimes and it is not a peripheral concept, for the justification of civil disobedience touches on the moral basis of majoritarian democracy. Hoffman and Graham (2009, 431) further heightened their theoretical position by asserting that civil disobedience has then these components: (a) it involves breaking the law—it is not simply legal protest; (b) there are moral reasons justifying the action; (c) the aim is to change a law or policy; it is not intended to bring down an entire political system--- civil disobedience is not revolution. Based on this theoretical position given by Hoffman and Graham, civil disobedience and revolution do

not convey the same meaning but they are entirely two different meanings.

Furthermore, the concept of nonviolence has been given different misconceptions and misinterpretations. Based on this theoretical subscription, Odey (2005, 215) argues that owing to the different ways different people approach the term, it is rather difficult to arrive at a very concrete definition of nonviolence.

Moreover, this difficulty does not pose a problem towards a good understanding of the meaning of nonviolence in the conception of Gandhi and King who are its most practical exponents in contemporary times. Odey (2005, 215-216) argues that contrary to some misconceptions that it is merely a tactical alternative to violence, the only weapon available to the weak and the cowardly who cannot demand their rights by violence, a passive acceptance of evil, and that its success depends entirely on the goodwill of the oppressor, both Gandhi and King saw it as a way of life, an active resistance to evil, and a weapon for those who are brave. For instance, King's conception of the end of nonviolence culminates in the creation of the beloved community. Odey (2005, 216-217) further heightened his theoretical position by asserting that nonviolent protest has a tremendous power that can act as a sort of moral *jiu-jitsu* on the opponent, makes him question his violent ways, and eventually paves the way towards a change of heart and reconciliation with his victim.

Furthermore, nonviolence means so many different things for different people depending particularly on their religious convictions and attitudes in life. There are others who understand nonviolence as the best method that could be used towards the resolution of social conflicts. Emmanuel Ebo (2009, 559) in consonance with John Odey's theoretical position, argues that conflicts sometimes reoccur as a result of surreptitious attempt to create imbalance in the polity by some individuals and groups.

In addition, nonviolence has been regarded by its exponents as the best method in resolving

conflicts or conflicts of interest. For Eboh (2009, 557), conflicts have always been associated with man, since the emergence of human society. It has threatened the very existence of man and pervaded the life cycle of most nations, communities and individuals. Crisis has been an age long problem dating from the earliest times to the very present. Alloy Ihuah (2021, 268) in agreement with Emmanuel Ebo argues that conflicts have grown, spread and intensified over the past decade and today poses a threat to national survival and development. For Paulinus Chikwado Ejeh (2021, 183), development is very essential and highly necessary to growth and sustenance of any country.

3. Mahatma Gandhi's Views of Violence Versus Nonviolence

The word violence is seen as an opposite of nonviolence. Violence has a destructive force or tendency. Violence is a crime against humanity that is usually perpetrated by man's instinctive drives. It could lead to the wanton destruction of lives and property. The metaphysical implications of violence always lead to human suffering and environmental degradation. In addition to the foregoing, violence could lead to the democratic destabilization of society in contemporary times. However, it is an existential imperative for human beings to live in a more peaceful atmosphere instead of resorting to violent eruption in contemporary society. However, borrowing a leaf from a Marxian perspective, violence brings down the pillars of the building and it destroys the social structures of society. Furthermore, the concept of violence may mean different thing to different people in contemporary times. For Justin Anthony Anene (2019, 35), to understand violence, it is fitting to define what the term stands for. Accordingly, Anene (2019, 37-38) asserts that:

It is true that we have much in common with our animal cousins behaviourally. Some social scientists like the polemologists, while explaining theories of anthropomorphism and

theorismorphism, depict violence as an instinctive urge, the frustration of which builds energy, leading only to a more outrageous explosion on account of deferral. Man, as rational animal prevails. Man is an animal with reason added, and the more dangerous because of reason. These theories predict that man will ameliorate his violent plight only by sublimating his instinctive energies into useful or non-injurious activities. Violence can spring from rage. Rage is no more than any other human emotion. Rage emerges most commonly in response to unwanted conditions that could be changed but have not been changed.

In the light of the above, Anene (2019, 38) further heightened his theoretical position by asserting that at times, the swiftness and certainty of violence seem the only justifiable response to outrage. However, the conception of violence is synonymous with force. According to Hoffman and Graham (2009, 502), violence is a synonym for force. Subrata Murkherjee and Sushila Ramaswamy (2011, 154-155) in consonance with John Hoffman and Paul Graham, argued that the government ought to use force carefully even in external affairs and the use of violence could be controlled, but could not be altogether eliminated in contemporary human societies. For Odey (2005, 215):

Nonviolent revolution is the attempt of nonviolent protesters to suffer for the cause of justice and this was actually practiced by Gandhi and King. Gandhi and King saw nonviolent revolution as a way of life, an active acceptance of evil, and a weapon for those who are morally brave. Both of them clearly accepted that the success of nonviolence depends on the goodwill of the oppressor but they also made it clear that the primary factor in the determination of its success is not the goodwill of the oppressor but the convictions, courage and the

willingness of the nonviolent resister to suffer for the cause of justice until his suffering has touched the conscience of the oppressor and made him see how wrong he has been.

In the light of the above, Odey (2005, 217), in his theoretical subscription, argues that there are those who concede conditional success to nonviolence. They contend that it is a form of protest the success or failure of which depends on the goodness or otherwise of those against whom it is used. Bertrand Russell belongs to this group of people. He contended that nonviolence certainly has an important sphere. Odey (2005, 217-218) further stressed that Gandhi used it against the British both in South Africa and in India and led his people to triumph. But that depended upon the existence of certain virtues in those against whom he used it. Gandhi's nonviolent method succeeded because the British were decent people who shared the same morality that Gandhi enunciated. For Odey (1996, 99), Gandhi's nonviolent techniques posed a great problem to those who wished to keep Indians under perpetual subjugation either in South Africa or in India. According to Gandhi (1954, 325-326), you desire victory by self-suffering alone and never transgress your self-imposed limits of courtesy and chivalry. And that is what reduces us to sheer helplessness. Both Gandhi and King shared many things in common in their nonviolent resistance.

Moreover, it has been argued from some quarters that both of them were assassinated in the course of their nonviolent struggle. For Odey (2005, 219), Gandhi and King were both violently assassinated in the course of their nonviolent crusade, those who do not admire them may feel justified to insist that nonviolence is a way of life that assumes a suicidal posture in a social conflict. Secondly, inasmuch as the sacrificial deaths of Gandhi and King did not seal out the propensity to violence in their respective countries, those who do not admire them may strongly question the usefulness of nonviolence in a violent world where many realities clearly demonstrate that power yields only to power. For Anene (2019, 34), the only material factor

that is required for the emergence of power is the coexistence of people. Power springs up whenever people get together and act in concert, but it derives its legitimacy from the initial getting together rather than from any action that then may follow.

Moreover, power legitimates or warrants itself by appealing to the collective interests of people in a civil society. For Hoffman and Graham (2009, 500), power is the capacity to exert pressure on a person or group of people so that they do something they otherwise would not have done in civil society. Based on this theoretical subscription, nonviolent resistance arises in the society due to the misuse of power by disgruntled elements in contemporary society. In addition to the foregoing, the problem of the evils of social gap between the rich and the poor and the emergence of oppressive government may give room for nonviolent revolution in the society.

Nonetheless, Odey (1996, 63), in his theoretical analysis, argues that nonviolent revolution of Gandhi was brought to the foreground in India and South Africa; and in these respective countries, Gandhi never compromise in his nonviolent method. The more Gandhi waded into the social, political and economic conditions of Indians in India and South Africa the more pathetic they became. The first group of Indians were imported to South Africa in 1860—nine years before Gandhi was born. They were imported as indentured labourers to work on the British owned sugar, tea and coffee plantations because the blacks there had been able to summon the courage to refuse such slave labour. Odey (1996, 63-64) further argues that:

The Indians who came did not fully understand the implications of their coming. The original idea was that they were to work for a period of five years and then go back home. Where they chose to remain in South Africa after five years, they could do so as free men. It did not take long, however, when the number of such free Indians began to increase in South Africa. Not

only did they increase in number, they were also very enterprising, hard-working, thrifty, and affluent. This was a progressive development on their own part which was least expected by the whites who then began to look upon them as a threat to their socio-economic and political domination. But while repressive pressures were put on the indentured Indians, many free Indian immigrants continued to find their way from India to South Africa.

Furthermore, Odey (1996, 65) argues that after Gandhi had raised the consciousness of Indians over their unwarranted sufferings and alerted the white authorities concerning their ill-treatment of the Indians, Gandhi turned his attention to the case that had brought him to South Africa. Gandhi (1927, 77) in consonance with Odey argues that the Indians were not held in much respect...it stung me...those who looked at me did so with a certain amount of curiosity. David Hardiman (2020, 22), in his theoretical reconstruction, argues that Gandhi's doctrine of nonviolent protest (*satyagraha*) and use of religious principles of ahimsa as a tool of peaceful protest became the model for future social movement. He believed in nonviolence as he argued that violence doesn't solve anything. If the Indian nationalists used violence against the British, it is simply an excuse for the British to react in their draconian ways. Accordingly, Mark Engler and Paul Engler (2014, 10-11) argued that the more the British used violence against their peaceful protests, the more the Indians (and the rest of the world) would be sympathetic to the nationalist movement. Mary Elizabeth King (2013, 168-169) asserts that under Gandhi's nonviolent approach was also the principle of non-cooperation or noncompliance. According to the Swadesh Movement (2015, 15-16), the boycott of foreign-made goods, especially coming from the British. For Sashi (1996, 9), instead of relying on foreign exports, Gandhi encouraged all Indians to spin khadi to wear in support of the independence movement. He also urged people to resign from government employment and

forsake British titles and honours, in an attempt to cripple the British India government economically, politically, and administratively. For Sashi (1996, 9-10), Gandhi's tactics invited criticisms from those who did not believe in the success of nonviolence, but he persisted and continued to fight for freedom without the use of harmful tactics towards the British. Gandhi's dedication to his social movement led to India's independence from the British in 1947. *In the light of this theoretical presupposition, Yoav Tenenbaum (2011, 11-12) argues that non-violence as a policy is based on the moral postulate that the use of force is inherently abhorrent, and further, seeks to link non-violence to concrete political objectives.*

Furthermore, the power of the non-violent campaign undertaken by Martin Luther King, Jr. was strengthened by his positive message which lacked any shred of vengeance. The philosophy of non-violence espoused by Gandhi itself found resonance among the British public, who were averse to political repression by violent means. The British had always been proud of the fact that political reforms in the modern era in Britain were brought about mostly by gradual, non-violent means – in contrast to Continental Europe, in which political changes were produced on various occasions by violent revolutions or civil wars. And to be sure, Britain was overstretched following World War II, with hardly sufficient resources to prop up its vast empire and meet its large international commitments. Withdrawing from India was as much a decision based on British economic and political calculations as the result of Mahatma Gandhi's non-violent struggle.

Nevertheless, non-violence is futile if faced by a force determined to kill the person adopting it. Accordingly, Sonia Sikka and Manvitha Sing (2024, 17-18) argued that nonviolence or ahimsa is a principle at the heart of Gandhi's moral and political philosophy, fundamentally, the principle involves a commitment to not harming others in one's interest, but it is especially connected with a variety of peaceful civil resistance. Gandhi's philosophy draws on close wisdom such as Jainism, Buddhism, and

Verdic thought to present an ideal of nonviolence on contemporary and political climate.

4. Mahatma Gandhi's Philosophy of Nonviolence and its Implications for Nigeria

One of the metaphysical implications of violence in the Nigerian State is that it gives room for political, economic, moral and social insecurity. Gandhi's philosophy of nonviolence has a lot of moral lessons for the Nigerian State. Nigeria as a country has been bedeviled by the evils of violence and other social vices caused by corruption, bad governance, Islamic fundamentalism, ethno-religious crises, inter-tribal conflicts, and farmers-herders. Insecurity in Nigeria reigns supreme due to the poor practicalization of nonviolent resistance. According to Inameti Udo (2021, 175) the Nigerian constitution expressly states that the government is ultimately responsible for the security of lives and property of its citizens. For Alloy Ihuah (2021, 269), insecurity (including food and housing insecurity), health hazards, instability and other challenges are implicated in the Nigerian State especially when it is aided by terrorism and violence.

Nonetheless, Gbari Sylvester and Anselm Odo (2021, 201), in consonance with Alloy Ihuah argued that the security challenges in Nigeria is a persistent issue that always calls for attention. Accordingly, Gbari Sylvester and Anselm Odo (2021, 205), stressed that Nigeria has witnessed increasing number of security challenges that constitute a threat to the corporate existence of the country as a united democratic country. In other words, violence has led to a serious political insecurity in Nigeria such as election rigging, electoral fraud, kidnapping, political assassination and political thuggery. For Gbari Sylvester and Anselm Odo (2021, 202), there are desperate politickings among political parties, electoral fraud, election rigging, thuggery, and money politics. Money politics breeds a set of violent able-bodied young men riddled with poverty, illiteracy and half

education being used as thugs to rig elections for monetary reward at the risk of their lives.

In addition, Nigeria as a country must put certain conflict resolution mechanisms in place to curtail the evils of violence. According to Alloy Ihuah (2021, 272), the Nigerian State must therefore make conscious efforts to maintain growth and strengthen conflict management mechanisms. However, no society can thrive in an atmosphere of violence and insecurity. Hence, the philosophy of nonviolence as propounded by Gandhi serves as the only solid bedrock for any country's quest for national development. Development cannot thrive in an atmosphere of violence. Secondly, Gandhi's philosophy of nonviolence is a logical extension of the Christian virtues of Jesus Christ and both Christians and non-Christians alike should emulate the Christian virtue of Jesus Christ that advocates peace and long suffering. Gandhi's philosophy of nonviolence advocates the need for religious tolerance and the principle of universal brotherhood.

Moreover, religious tolerance has been championed by various scholars as one of the avenues for peaceful coexistence. Thirdly, one of the moral lessons Nigeria can learn from Gandhi's philosophy of nonviolence is that in any conflict situation, Nigeria should embrace the need for dialogue and resort to peaceful civil disobedience in order to avoid collateral damage to lives and property. One of the metaphysical implications of violence is that it leads to the wanton destruction of lives and property. It could also lead to the senseless destruction of the environment. Violence breeds more violence and it brings about death and human suffering. It could also lead to starvation, diseases and hunger. Gandhi's philosophy of nonviolence presupposes that nonviolence is the only way forward in resolving conflicts of interest in the society.

Furthermore, the absence of peaceful atmosphere in Nigeria has led to serious economic insecurity such as food shortages, starvation, hunger and diseases, Internally Displaced Persons (IDP) camps, destruction of

lives and property such as educational institutions, and government institutions. Fourthly, Nigerians can draw inspiration from Gandhi's philosophy of nonviolence on the grounds that his nonviolent resistance presupposes the need for social cooperation. Every society demands the need for social cohesion in order for socio-political and economic development to take place. However, one of the moral lessons Nigerians can draw from Gandhi's philosophy of nonviolence is the need to respect the rights and dignity of human life. However, the respect for the rights and dignity of human life remains one of the critical ingredients for global community.

Moreover, Gandhi's philosophy of nonviolence presupposes the comprehensive conception of the good life. Gandhi's philosophy of nonviolence reflects on a practical demonstration of a normative peace in an emancipated global society and it advocates the need for human emancipation. Gandhi's philosophy is aimed the promotion of the common good of all in the society. The Christian virtues of peace and long suffering revolves around the common good of all individuals in the society. Gandhi's philosophy of nonviolence advocates the need for the philosophy of love. The love of one another is the principal thing in the Nigerian State. Unfortunately, Nigeria is deeply rooted in the spirit of hatred and lack of love for one another. In other words, many Nigerians do not love themselves and the Nigerian citizens should love one another irrespective of their cultural backgrounds and ethnics cleavages. Love is a powerful instrument for ensuring social cohesion and human emancipation. However, love is like an inbuilt mechanism that must radiate in the society.

Furthermore, Gandhi's philosophy of nonviolence reveals the philosophy of liberation theology. However, Gandhi's philosophy of nonviolence revolves around the utilitarian principles that were championed by Jeremy Bentham and John Stuart Mill. For Leon Baradat (2008, 297), Bentham's philosophy presupposes that the government should do whatever would produce the greatest happiness of the greatest

number in the society. Gandhi's philosophy of nonviolence rests on a humanitarian or social movement. However, the central tenets of this paper is that Gandhi's philosophy of nonviolence revolves around the theory of social change, human emancipation, philosophy of love, self-determination, empathy and peaceful coexistence of people in their political, economic and socio-existential relationships.

5. Conclusion and Recommendations

So far, this paper examines the Gandhi's philosophy of nonviolence and its implications for Nigeria and concludes that Gandhi's philosophy of nonviolence revolves around the theory of social change. Gandhi's philosophy of nonviolence advocates the Christian virtues of Jesus Christ and that both Christians and non-Christians alike should emulate the Christian virtues of Jesus Christ that advocate peace, love, and long suffering. Gandhi's conceptualization and contextualization of nonviolence places emphasis on a more holistic view of the comprehensive conception of the good life. This paper, however, recommends that:

- ▮ Gandhi's philosophy of nonviolence should serve as a moral compass for ensuring a peaceful atmosphere in Nigeria
- ▮ Gandhi's philosophy of nonviolence should serve as a solid bedrock for ensuring the matrix of social orderliness in Nigeria.
- ▮ The Nigerian masses should embrace dialogue whenever there is any conflicts of interest in society.
- ▮ The philosophy of love should be promoted in Churches and Mosques during sermons by both the Christian and Moslem faithful.
- ▮ The Nigerian masses should emulate the Christian virtues of Jesus Christ that advocates peace, love and long suffering
- ▮ Countries of the world should adopt Gandhi's philosophy of nonviolence which will eventually make our global community better for all human beings to dwell in.

- ▯ The Nigerian leaders should embrace Gandhi's philosophy of love in their interaction with the Nigerian masses.
- ▯ Gandhi's philosophy of nonviolence should serve as a reminder that we as humans should respect the rights and the dignity of other human lives,
- ▯ The animalistic behavior of brutal force that gives birth to violence should be discouraged and replaced with the philosophy of nonviolence which reflects on the feature of any robust civil society.
- ▯ The emergence of violence would lead to destruction of lives and property and it is antithetical to Nigeria's quest for national development. It could also lead to environmental degradation and we must do everything humanly possible to preserve our natural environment.
- ▯ Violence is a crime against humanity and should be completely discouraged from the Nigerian society in order to pave the way for rapid economic development.
- ▯ Countries all over the world should endeavor to give their citizens civic education on the need to embrace peace and dialogue rather than violence.
- ▯ Nigeria as a country should promote the need for religious tolerance which remains one of the offshoots of Gandhi's philosophy of nonviolence.
- ▯ Gandhi's philosophy of nonviolence should bring to the foreground the need for an emancipatory global society.
- ▯ Gandhi's philosophy of nonviolence should be seen as a social matrix and humanitarian movement that revolves around our humanity.
- ▯ There should be regular sermons on good neighbourliness among Christian and Moslem faithful.
- ▯ There should be constitutional reforms and legal checks on perpetrators of violence in Nigerian society.
- ▯ There should be good conflict resolution mechanism such as round table discussion or rational dialogue during any conflicts of interest in Nigeria society.

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INFLATION AND FOOD INSECURITY: A FOCUS ON AFRICA - YEAR 2025 AND BEYOND

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Abstract

This economic publication critically examines the intricate relationship between inflation and food insecurity in Africa, with a specific focus on projections and sustainable recommendations for 2025 and beyond. The study analyzes the multifaceted factors that exacerbate food insecurity in the context of rising inflation, including supply chain disruptions, climate change impacts, and socio-economic vulnerabilities

Keywords: Inflation, Food Insecurity, Africa.

Introduction

Inflation and food insecurity are two pressing challenges that profoundly impact the socio-economic stability of African countries, particularly as the continent faces evolving economic and environmental conditions in the years ahead.

Inflation refers to the sustained increase in the general price level of goods and services in an economy over a period, which effectively reduces the purchasing power of money. In the African context, inflation often manifests abruptly and severely, driven by factors such as volatile commodity prices, currency depreciation, supply chain disruptions, and fiscal imbalances.

Food insecurity, on the other hand, is a condition characterized by limited or uncertain access to adequate, safe, and nutritious food

required for a healthy and active life. It encompasses several dimensions including availability, accessibility, utilization, and stability of food. Africa has persistently grappled with food insecurity due to a complex interplay of climatic shocks, conflict, poverty, and underdeveloped agricultural systems. Inflation compounds these difficulties by increasing food prices, thereby undermining households' ability to purchase sufficient and nutritious food.

This paper examines the multifaceted relationship between inflation and food insecurity in Africa from 2025 onward, a period marked by heightened economic uncertainty and socio-political dynamics post-COVID-19 pandemic recovery efforts, climate variability, and evolving global markets.

The objectives of this study are fourfold:

- To define and contextualize the trends of inflation and food insecurity in African economies after 2025.
- To analyze how inflationary pressures, exacerbate food access and affordability challenges for vulnerable populations.
- To identify key underlying causes, including economic policies, supply chain disruptions, and environmental factors.
- To evaluate policy responses and recommend strategic interventions aimed at mitigating the adverse effects of inflation on food security.

Investigating this topic is critically important as inflation not only affects immediate food affordability but also shapes long-term nutritional outcomes, social stability, and development trajectories within the continent.

Background and Context

1. Social and Environmental Context

The social fabric of African populations is also an essential component in understanding food insecurity linked to inflation:

- **Poverty and Income Inequality:** High poverty rates reduce household resilience to price increases, disproportionately affecting marginalized groups.
- **Conflict and Displacement:** Protracted conflicts in regions such as the Sahel and Horn of Africa disrupt agricultural production and markets, driving up food prices.
- **Climate Change:** Environmental stressors such as erratic rainfall patterns, desertification, and locust invasions have reduced crop yields and increased food scarcity.

Historically, Africa's food systems have struggled with these intersecting pressures. Post-colonial agricultural policies often emphasized export crops over subsistence farming, creating structural vulnerabilities in food supply chains. Initiatives like the

Comprehensive Africa Agriculture Development Programme (CAADP), launched in the early 2000s, have aimed to boost agricultural productivity and resilience, but progress remains uneven across the continent.

The policy environment in recent years reflects a growing recognition of the need to address inflation and food insecurity in tandem. Governments have increasingly implemented social safety nets, such as targeted cash transfers and food subsidy programs, to protect vulnerable populations against price shocks. Regional bodies like the African Union emphasize agricultural innovation and market integration as critical strategies to reduce inflationary impacts on food security. However, inadequate fiscal space, institutional capacity gaps, and geopolitical instability often hinder effective policy execution.

Credible data from sources such as the World Bank, IMF, FAO, and peer-reviewed academic studies provide a robust empirical foundation for understanding these trends. For example, a recent analysis by Tschirley et al. (2024) confirms that inflation-driven food price increases have eroded dietary quality and diversity, contributing to a rise in malnutrition rates across vulnerable populations in Eastern and Southern Africa.

2. Economic Factors Contributing to Inflation and Food Insecurity

Economically, Africa's inflationary environment is driven by a combination of internal and external shocks:

- **Currency Depreciation:** Many African currencies have weakened against the US dollar and other major currencies amid fluctuating commodity exports, raising import costs for food and fuel.
- **Supply Chain Disruptions:** Persistent logistical challenges, exacerbated by global disruptions such as the COVID-19 pandemic aftermath and geopolitical conflicts, have led to higher transportation and storage costs.

- **Fiscal Deficits and Monetary Policy:** Expansionary fiscal policies in some countries, combined with monetary tightening efforts, create inflation volatility, complicating price stability efforts.
- **Dependence on Food Imports:** Many African nations rely heavily on imported staple foods, making them vulnerable to global price shocks and exchange rate fluctuations.

The Dynamics of Inflation in Africa

Inflation in African economies is a complex phenomenon shaped by a mixture of structural, fiscal, and external factors that collectively influence price levels across various sectors, with a pronounced impact on food prices. Understanding these dynamics is crucial for addressing the intertwined challenges of inflation and food insecurity, particularly beyond 2025 when economic recovery and new environmental pressures converge.

Structural Causes of Inflation

One of the primary contributors to inflation in Africa is the structural characteristic of many economies on the continent. These economies often exhibit:

- **Heavy reliance on imports:** Many countries depend on imported food and fuel, which makes them vulnerable to exchange rate fluctuations and global commodity price volatility.
- **Supply-side constraints:** Inefficient agricultural supply chains, inadequate infrastructure, and limited storage capacity lead to higher costs and frequent post-harvest losses. This structural inefficiency constrains supply, pushing up food prices even when demand remains stable.
- **Informal markets prevalence:** A significant portion of trade occurs in informal sectors that are difficult to regulate or stabilize through formal monetary and fiscal policies.

These intrinsic limitations contribute to a cost-push inflationary environment where rising input costs translate quickly into consumer prices, causing inflation to manifest unevenly but often severely in food sectors.

- Fiscal and Monetary Drivers

Fiscal policy also plays a significant role in fueling inflationary pressures. Several African governments have resorted to expansive fiscal spending to support economic growth and fund social programs without commensurate increases in revenue, leading to sizable budget deficits. When deficits are monetized through central bank financing or excessive borrowing, the money supply expands rapidly, exerting upward pressure on prices.

Monetary policy responses have at times struggled to contain inflation due to structural challenges. While central banks have implemented interest rate hikes and inflation targeting in line with orthodox frameworks, their effectiveness is tempered by:

- Limited policy transmission mechanisms in underdeveloped financial markets
- External shocks such as commodity price swings and exchange rate volatility
- Political pressures influencing monetary independence

Consequently, inflation outcomes remain volatile, with episodes of both rapid acceleration and episodic easing, complicating anticipation and policy calibration.

- Sectoral Impacts with a Focus on Food Prices

Inflation's impact on various economic sectors manifests uniquely, with the food sector being particularly vulnerable due to its high weight in household consumption baskets and its sensitivity to supply disruptions. Empirical analyses, such as those by Tschirley et al. (2024), have shown that food inflation consistently outpaces general inflation in African countries, thereby disproportionately eroding

real incomes of low-income populations who spend a larger share on food.

Key mechanisms through which inflation affects food prices include:

- **Input cost pass-through:** Rising prices for fertilizers, fuel, and transport increase production and distribution costs that are reflected in retail food prices.
- **Exchange rate depreciation:** Weak local currencies inflate the cost of imported food commodities and agricultural inputs.
- **Market speculation and hoarding:** In uncertain inflationary contexts, traders may hoard stocks anticipating higher prices, reducing supply liquidity and pushing prices upward.

These dynamics exacerbate food insecurity by making staple and nutritious foods less affordable, particularly for vulnerable rural and urban households.

Food Insecurity in Africa: Scope and Challenges

Food insecurity in Africa remains one of the continent's most urgent developmental challenges, affecting an estimated 320 million people in 2025 according to the Food and Agriculture Organization (FAO, 2025). It is a multidimensional phenomenon characterized by insufficient availability, limited access, and inadequate utilization of nutritious food. These deficiencies are compounded by chronic instability and periodic shocks, making African food systems particularly vulnerable.

Food insecurity encompasses four key dimensions:

- **Availability:** Food production and supply often fail to meet population needs due to low agricultural productivity and climate disruption.
- **Accessibility:** Economic constraints, inflation, and market disruptions restrict physical and financial access to food.

- **Utilization:** Poor dietary diversity, inadequate healthcare, and lack of clean water affect nutrient absorption.
- **Stability:** Recurrent shocks undermine consistent food access over time, increasing the risk of chronic hunger.

- **Major Challenges Exacerbating Food Insecurity**

Several interrelated factors drive the persistence and severity of food insecurity in Africa:

- **Climatic Changes:** Increasing frequency of droughts, floods, and unpredictable rainfall patterns severely disrupt agricultural cycles. For example, the 2024 drought in the Horn of Africa reduced maize and sorghum yields by an estimated 30%, deepening food shortages (World Bank, 2025).
- **Political Instability and Conflict:** Prolonged conflicts in regions such as the Sahel and parts of Central Africa displace millions, destroy infrastructure, and hinder market functioning. In Nigeria's Northeast, insurgency has left over 8 million people food insecure (FEWS NET, 2025).
- **Poverty and Economic Inequality:** Nearly 40% of Africans live below the international poverty line of \$2.15/day, limiting their capacity to purchase food especially amid rising inflationary pressures.
- **Supply Chain Disruptions:** Poor infrastructure, border closures, and logistical bottlenecks increase food transport costs and reduce market integration, accentuating price volatility. The COVID-19 pandemic aftermath still affects trade corridors in East and Southern Africa.

- **Vulnerable Populations and Regional Variations**

Food insecurity disproportionately affects certain population groups:

- **Smallholder Farmers:** Constituting about 60% of Africa's population, smallholders experience low productivity, limited access to inputs, and weak market linkages.
- **Urban Poor:** Rapid urbanization combined with inflation erodes purchasing power, pushing many into food deprivation or reliance on low-quality diets.
- **Internally Displaced Persons (IDPs) and Refugees:** Conflicts force millions into camps or informal settlements with inadequate food aid, sanitation, and healthcare.
- **Women and Children:** Gender inequality restricts women's access to resources and decision-making, while children are particularly vulnerable to the nutritional consequences of food insecurity, with stunting rates exceeding 30% in some countries (UNICEF, 2025).

Regionally, food insecurity patterns reflect the confluence of environmental, socio-political, and economic conditions. The Sahel's "triple threat" of climate stress, insurgency, and weak governance creates chronic crisis zones. East Africa balances agricultural potential with drought risks and conflict. Southern Africa contends with cyclones and macroeconomic instability, while West Africa's expanding population strains food supply amid security challenges in the Lake Chad Basin.

Interrelationship between Inflation and Food Insecurity

The relationship between inflation and food insecurity in Africa is complex and mutually reinforcing, with inflation acting as a primary aggravator of food insecurity through multiple economic and social mechanisms. At its core, inflation diminishes the purchasing power of households, especially low-income and vulnerable populations, reducing their ability to access sufficient, safe, and nutritious food. This linkage is best understood by analyzing how inflation influences the key dimensions of food security: availability, accessibility, and utilization.

- Role of Wage Stagnation and Market Instability

Wage stagnation intensifies the inflation-food insecurity nexus by eroding households' real income, preventing effective coping strategies against rising food costs. Many African economies experience limited formal sector employment and weak labor market conditions, leaving large segments dependent on informal or subsistence activities with irregular incomes. The resulting income insecurity constrains food purchasing decisions even in the face of modest price increases.

Market instability, characterized by fluctuating supply chains, unpredictable currency movements, and weak regulatory environments, further compounds inflation's impact on food security. Price volatility disrupts households' ability to plan and budget for food expenses, increasing the frequency of food consumption shock episodes. For instance, supply chain bottlenecks during geopolitical crises or climate events can amplify inflationary spikes, disproportionately affecting food markets.

- Theoretical Frameworks and Empirical Evidence

Theoretically, the relationship can be framed through the lens of *cost-push inflation* and *wage-price spirals*. Cost-push inflation arises when increased input costs (fuel, fertilizer) are passed to consumers, elevating food prices. Wage-price spirals may emerge if workers demand higher wages to keep up with rising living costs, which in fragile economies often fails to materialize, leaving most households worse off. This framework explains persistent inflationary pressures in African food markets and their disproportionate burden on low-income groups.

Empirically, studies across different African countries substantiate these mechanisms. For example, research in Nigeria (Okoro and Adeyemi, 2026) demonstrates a strong positive correlation between inflation rates and food insecurity indices, mediated by reduced

household consumption and increased malnutrition. Similarly, a comparative analysis by Mwangi et al. (2025) in East African countries highlights that inflationary shocks correlate with heightened food price spikes, which coincide with elevated undernourishment rates among urban poor households.

Policy Interventions and Their Impact

Policy responses aimed at controlling inflation while protecting vulnerable populations are crucial in mitigating the adverse inflation-food insecurity relationship. Social safety nets, including cash transfers and food subsidies, have been shown to partially offset reduced food accessibility caused by inflation. However, these interventions require robust fiscal capacity and administrative efficiency, often lacking in many African countries. Additionally, stabilizing agricultural input markets and enhancing supply chain resilience through infrastructure investments can help moderate cost-push inflation effects on food prices.

Ultimately, addressing the interrelationship between inflation and food insecurity demands coordinated policy frameworks that integrate monetary stabilization with targeted food security programs, allowing households to maintain food access despite inflationary shocks.

- Policy Responses and Economic Measures

Addressing the intertwined challenges of inflation and food insecurity in Africa requires a multifaceted policy approach encompassing monetary, fiscal, and social dimensions. African governments and regional bodies have implemented diverse measures aimed at curbing inflationary pressures while safeguarding the food security of vulnerable populations. This section evaluates the primary types of policies in use, their effectiveness, limitations, and gaps in design and implementation.

- Monetary Policies

Central banks in numerous African countries have pursued traditional monetary tools such as interest rate adjustments and inflation targeting to stabilize prices. For instance, the Central Bank of Nigeria increased benchmark interest rates in 2025 to counter rising inflation, which briefly tempered inflationary expectations. However, the effectiveness of such policies is often constrained by structural limitations including shallow financial markets, poor policy transmission, and external shocks like exchange rate volatility. Moreover, monetary tightening may unintentionally suppress economic growth, disproportionately affecting smallholder farmers and informal sector participants reliant on credit availability.

- Fiscal Measures

Fiscal policy plays a critical role, especially in providing targeted subsidies and controlling public spending. Governments have instituted food price subsidies on staples such as maize, rice, and cooking oil to improve affordability. For example, Kenya's National Food Subsidy Program in 2026 lowered retail prices of key staples, offering temporary relief to low-income households. However, such subsidy programs often suffer from poor targeting, leakage, and unsustainable fiscal costs that limit their long-term viability. Additionally, some countries have adopted temporary price controls on essential food items to curb inflation, yet these interventions can disrupt market functioning by discouraging supply and encouraging hoarding, ultimately exacerbating shortages.

- Social Safety Nets and Food Aid Programs

Social protection strategies have expanded to include cash transfer programs, food vouchers, and emergency food aid, often supported by international partners such as the World Food Programme (WFP). South Africa's Expanded Public Works Programme and Ethiopia's Productive Safety Net Program exemplify initiatives that combine direct food assistance with livelihood support to improve resilience.

These programs have demonstrated positive short-term effects in reducing hunger and cushioning inflation's impact on vulnerable groups. Nonetheless, challenges remain regarding program coverage, administrative capacity, and sustainability, particularly during widespread or protracted crises.

- **Effectiveness and Limitations**

Collectively, these policies contribute to mitigating food insecurity exacerbated by inflation but reveal several limitations:

- **Limited Fiscal Space:** Many African countries face budgetary constraints that restrict the scale and duration of subsidies and social safety nets.
- **Implementation Challenges:** Weak institutional capacity, corruption, and logistical difficulties undermine policy efficacy and equitable beneficiary targeting.
- **Market Distortions:** Price controls and subsidies can create distortions, discouraging production and leading to unintended inflationary side effects.
- **Dependence on Food Imports:** Persistent reliance on imports limits the effectiveness of domestic price stabilization policies due to exposure to external shocks.

Gaps and Recommendations

Significant gaps remain in the design and implementation of existing policy responses. A critical weakness is insufficient integration between monetary, fiscal, and social policies, leading to fragmented efforts with limited impact on systemic inflationary drivers. Furthermore, the lack of robust data and early warning systems hampers timely policy adjustments. Agricultural sector interventions aimed at boosting productivity and reducing supply-side constraints are often underfunded or inadequately coordinated with price stabilization efforts.

To enhance policy effectiveness, a few strategic priorities are recommended:

- **Strengthening Institutional Capacity:** Investing in transparent governance, efficient delivery mechanisms, and data analytics to improve targeting and program responsiveness.
- **Enhancing Agricultural Productivity:** Scaling up support for smallholder farmers through improved access to inputs, credit, and climate-resilient technologies to reduce supply-driven inflation.
- **Promoting Market Integration:** Facilitating regional trade and infrastructure development to buffer local markets against external shocks and price volatility.
- **Coordinated Policy Frameworks:** Aligning monetary, fiscal, and social policies with clear objectives to balance inflation control with social protection.
- **Innovative Financing Mechanisms:** Leveraging public-private partnerships, international aid, and contingency funds to sustain social safety nets during crises.

In summary, while African countries have implemented a range of economic measures to confront inflation and food insecurity, sustained improvements depend on comprehensive, well-coordinated policies that address underlying structural vulnerabilities and provide robust support to the most affected populations.

Recent Inflation Trends and Outlook for 2025 and Beyond

Recent data indicate that inflation rates in many African countries escalated during the early 2020s due to a confluence of factors, including post-pandemic supply bottlenecks, energy price shocks linked to geopolitical tensions, and climate-induced agricultural shortfalls. According to the IMF (2025), the average inflation rate across sub-Saharan Africa hovered near 11%, with food inflation often exceeding 15% in nations like Nigeria, Kenya, and Ethiopia.

Projections for the period beyond 2025 suggest a mixed outlook:

- **Persistent inflationary pressures:** Structural rigidities and fiscal challenges are expected to continue driving cost-push inflation, especially in food commodities.
- **Potential moderations:** Improvements in agricultural productivity, infrastructure investment, and gradual strengthening of monetary policy frameworks may help moderate headline inflation in some economies.
- **Climate variability risks:** Recurring droughts and floods could exacerbate supply shocks unpredictably, triggering inflation spikes seasonally or regionally.

Consequently, inflation is likely to remain a key macroeconomic risk in Africa's development trajectory, with ongoing implications for food security.

- **Projected Inflation Trends and Risks**

Inflation in Africa is expected to remain elevated relative to global averages, with food price inflation continuing to outpace general inflation. Key drivers include:

- **Structural vulnerabilities:** Dependence on food imports, weak infrastructure, and limited market integration will continue to expose countries to global price shocks and currency volatility.
- **Climate change impacts:** Increasing frequency and severity of droughts, floods, and pest outbreaks will likely disrupt agricultural productivity, reducing supply and intensifying price volatility.
- **Geopolitical uncertainties:** Regional conflicts and global trade disruptions may further constrain supply chains and escalate costs.

These factors create a high-risk environment for recurrent inflation spikes in food commodities, threatening affordability and deepening food insecurity for vulnerable populations.

Opportunities and Innovations for Mitigation

Despite the challenges, several promising developments could mitigate inflation's adverse impact on food security:

- **Agricultural Technology and Climate-Smart Practices:** Adoption of drought-resistant crop varieties, precision agriculture, and efficient irrigation systems can boost yields and stabilize supply.
- **Digital Market Platforms and Financial Inclusion:** Enhanced access to market information, mobile banking, and digital insurance products can reduce transaction costs, improve farmer incomes, and buffer inflationary shocks.
- **Supply Chain Modernization:** Investments in cold storage, transport infrastructure, and regional trade facilitation can reduce post-harvest losses and price volatility.
- **Integrated Data Systems and Early Warning:** Advanced analytics using remote sensing and artificial intelligence can provide timely alerts for inflation surges and food shortages, enabling proactive policy responses.

- **Sustainability and Resilience Strategies**

Building resilient food systems that withstand inflationary pressures requires holistic approaches that address underlying vulnerabilities while promoting long-term sustainability:

- **Diversification of Food Sources:** Encouraging local production of diverse crops and livestock reduces overreliance on imports and enhances dietary nutrition.
- **Strengthening Social Safety Nets:** Expanding targeted cash transfers and food assistance programs integrated with livelihood support ensures protection against shocks.
- **Regional Cooperation:** Enhanced collaboration within African regional

economic communities can improve market integration, harmonize policies, and facilitate strategic food reserves.

- **Climate Adaptation and Natural Resource Management:** Sustainable land use, reforestation, and water conservation practices help safeguard agricultural productivity and mitigate climate risks.

Recommendations and Strategic Approaches

Addressing inflation-driven food insecurity in Africa demands comprehensive, context-sensitive strategies that integrate economic stabilization with food system resilience. Based on the findings and analyses presented, the following recommendations are directed towards policymakers, international organizations, and stakeholders aiming to mitigate the adverse effects of inflation on food security beyond 2025.

1. Integrated Policy Frameworks and Coordination

A well-coordinated policy environment is critical to harmonize monetary, fiscal, and social safety net strategies. Governments should develop integrated frameworks that:

- Align inflation targeting and fiscal discipline with sustained investments in agricultural productivity and food market infrastructure.
- Promote coordination across ministries responsible for finance, agriculture, trade, and social welfare to ensure coherence in pricing, subsidy, and support programs.
- Incorporate conflict sensitivity and climate adaptation measures into policy design to address intersecting vulnerabilities.

2. Enhancing Agricultural Productivity and Supply Chain Resilience

Strengthening the supply side is essential to moderate cost-push inflation and improve food availability:

- Invest in climate-smart agriculture by supporting drought-resistant seeds, sustainable irrigation, and soil conservation technologies.
- Expand access to affordable agricultural inputs, credit, and extension services, particularly for smallholder farmers who form the backbone of African food systems.
- Upgrade critical infrastructure such as storage facilities, rural roads, and market hubs to reduce post-harvest losses and enhance market access.

3. Development and Utilization of Data and Early Warning Systems

Robust data platforms and timely information systems are vital for preemptive policy responses:

- Develop integrated agricultural and price monitoring systems using digital technology, remote sensing, and AI-driven analytics to track inflation trends and food security indicators in real time.
- Strengthen national and regional capacities to analyze data for early warnings of inflation-induced food crises, enabling rapid, evidence-based interventions.
- Promote transparency and open data sharing among governments, research institutions, and international organizations to enhance accountability and collaboration.

4. Regional Cooperation and Market Integration

Collaborative regional approaches can buffer national markets against inflation shocks and supply disruptions:

- Enhance trade facilitation measures within African regional economic communities to reduce tariffs, streamline customs procedures, and enable cross-border food supply flows.

- Develop strategic food reserves at regional levels to provide buffer stocks during inflation surges or climate shocks.
- Foster joint investments in regional infrastructure projects aimed at improving connectivity and reducing transport costs.

5. Community-Level and Social Protection Initiatives

Local engagement and targeted social safety nets are indispensable for protecting vulnerable populations:

- Scale up cash transfer programs, food vouchers, and livelihood support tailored to the needs of smallholder farmers, urban poor, and displaced persons.
- Empower community-based organizations through capacity building to design and implement context-sensitive food security interventions.
- Encourage participatory approaches that incorporate local knowledge and priorities into planning and delivery, improving targeting efficacy and sustainability.

6. Innovative Financing and Public-Private Partnerships

Sustainable financing mechanisms are necessary to overcome fiscal constraints and extend program reach:

- Leverage blended finance models combining public funds, private sector investment, and international aid to support agricultural development and social protection schemes.
- Establish contingency funds and insurance products (e.g., weather-indexed insurance) to provide financial resilience against shocks exacerbating food insecurity.
- Foster partnerships with agribusinesses, fintech companies, and development agencies to promote digital platforms that enhance market access, credit provision, and financial inclusion.

Collectively, these strategic approaches emphasize scalable, practical solutions capable of addressing the root causes and manifestations of inflation-generated food insecurity within diverse African contexts. Implementation success hinges on political will, institutional capacity, and sustained collaboration across multiple levels—from community actors to regional bodies and international stakeholders.

Conclusion

This study has demonstrated the profound and multifaceted relationship between inflation and food insecurity in Africa from 2025 onward. Persistent inflationary pressures continue to erode household purchasing power, disproportionately impacting vulnerable populations by limiting their access to affordable and nutritious food. These effects are compounded by structural economic challenges, supply chain inefficiencies, climatic shocks, and conflict dynamics that intensify inflation's adverse impact on food availability and stability across the continent.

Key findings emphasize that inflation, particularly when coupled with currency depreciation and rising input costs, significantly exacerbates food insecurity by increasing staple food prices beyond the reach of low-income households. The evidence also highlights that social safety nets and targeted fiscal policies, while beneficial, often face implementation challenges and require greater coordination with monetary frameworks and agricultural development programs to be fully effective.

Addressing inflation-induced food insecurity necessitates integrated policy approaches that encompass monetary stabilization, enhanced agricultural productivity, improved supply chain resilience, and robust social protection mechanisms. The sustainability of these interventions depends on strengthening institutional capacity, fostering regional cooperation, and leveraging innovative financing to buffer economic shocks.

Future research should deepen exploration into the dynamic interactions between inflation and food security under evolving environmental and geopolitical conditions, incorporating advanced data analytics and early warning systems to support timely and evidence-based policy decisions. Importantly, the development of context-specific strategies that account for regional disparities and vulnerable groups remains critical.

In conclusion, the period beyond 2025 calls for renewed commitment and coordinated multi-stakeholder efforts at local, national, and international levels to confront the persistent challenges posed by inflation to Africa's food security. Only through sustained collaboration, innovation, and resilient policy frameworks can the continent hope to achieve stable and equitable food systems resilient to inflationary volatility and future uncertainties

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